



FRIDAY, DECEMBER 21.

Automatic Safety Switch-Stand.

The accompanying engravings illustrate different forms of an automatic safety switch-stand, which was exhibited at the Chicago Exhibition, and which is in extensive use on several leading railroads.

The peculiarities of this switch-stand are as follows:

It is so designed as to be applicable to all localities, whether between or outside of tracks, and with signals of any desired size or shape; and at any height from the ground. The stand is operated by means of a weighted lever, which lies on the ground in either position of the switch, and which enables the switch to be thrown with great ease. The lever weight forces the switch home and holds it there. When operated automatically by a train on the main track the

Fig. 5 represents the automatic stand with an intermediate height of signal, say 6 or 7 ft. above the track. The lamp may be reached by means of steps formed on the cast-iron column.

Figs. 6 and 7 represent the high signal stand. In this application the signal may be placed at any desired distance above the track. The mast is held in a vertical position by a tripod formed of a wooden ladder and two iron braces, the object of the ladder being to enable a signal light to be easily placed on the top of the mast. This method of forming an upper bearing for the mast is cheap and effective.

A semaphore signal may be used with this stand when desired, as shown by Fig. 8, in which case the lamp is placed on the mast and revolves with it as before, while the signal receives its motion through a pair of small bevel gears.

To enable a train to run out of a siding through a closed switch a spring is sometimes applied to the connecting rod in the usual way, except that the spring works only in one direction, that is for a train running through a closed switch.

Fig. 9 represents another method of reaching the same re-

inaw; the Ontonagon & Brule River; the Saginaw, Tuscola & Huron; the Muskrat Lake & Clam River; the Detroit Union Railroad Depot & Station Co.

The first two are controlled and operated by the Grand Rapids & Indiana Co., and form an extension of that road from Petoskey to the Straits of Mackinac. The Cincinnati, Wabash & Michigan road is the extension into this state of a line commencing at Anderson, in the state of Indiana and terminating at Benton Harbor, on Lake Michigan, its entire length being 184.40 miles, 33.40 miles of which are within the limits of this state.

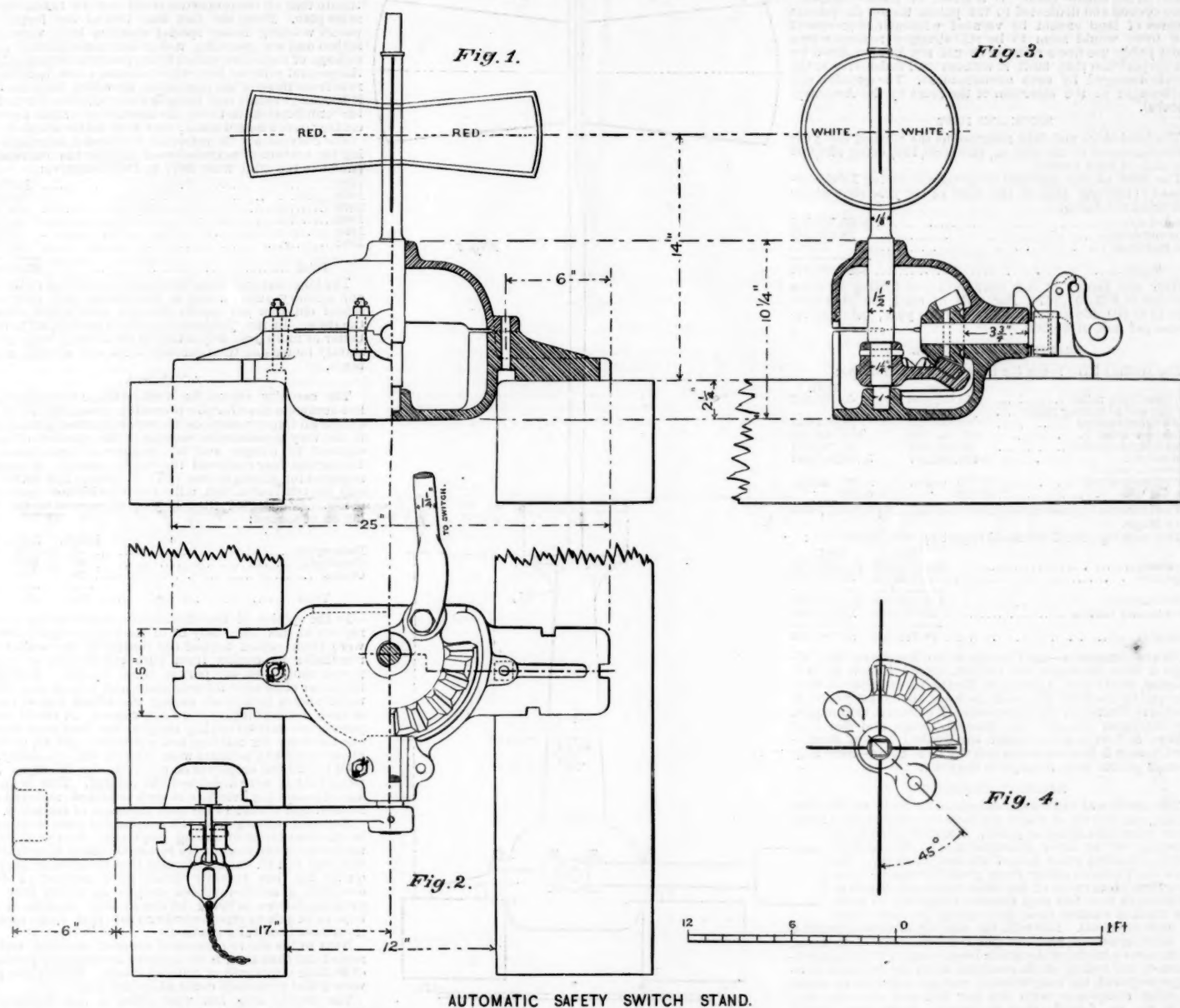
The fourth has as yet only constructed a section of its road, 20 miles in length, from Ontonagon to a point south of Rockland, no progress having been made with the work since the date of the company's annual report.

The Saginaw, Tuscola & Huron owns and operates a narrow-gauge road, at the date of its last report, extending from East Saginaw to Sebewaing, and since extended.

The Muskrat Lake & Clam River, at present, strictly speaking, a forest road, it is probable will in the near future develop into a local road for general traffic of considerable importance.

The last corporation of the list was organized under the provisions of act 214, Session Laws of 1881, and has already accomplished a work of great value and importance to the chief commercial metropolis of the state.

Since the last report from this office, 16 new railroad corporations have been organized, with a proposed construc-



AUTOMATIC SAFETY SWITCH STAND.

first pair of wheels closes the split switch, leaving it in proper position for the remainder of the train, and for other trains on the main line; in other words, if a train finds the switch at *danger* it sets it to *safety*, and leaves it so. Any obstruction between switch and main rail prevents the lever from being thrown to place, which is not the case with switch stands having a flexible connection with the switch. A latch stand is provided to hold the lever in position, and which may be locked with the ordinary switch lock.

Figs. 1, 2, 3 and 4 are different views of the automatic stand with low signal, or "ground stand." This stand is used principally in yards, as it offers but little obstruction to men walking between tracks, and at the same time is provided with a signal by day and by night. The latch stand is frequently omitted, enabling trains to run through the trailing switch from either track, without the necessity of throwing the switch by hand. The fact that this can be done indefinitely without injury to switch or stand makes this form of stand extremely useful in places where a great deal of shifting is done. When the stand is applied at turnouts where it is not desirable to allow trains to pass out of the siding without first opening the switch, a single latch-stand is applied to lock the switch closed. When the stand is used with a stub switch it is best to provide latch stands for each position of the lever.

sult, in which advantage is taken of the fact that when a switch is run through by a train the first action of the wheels springs the rails a little.

This slight springing of the switch rails is made use of to draw a bolt at the latch stand, which releases the lever, although the latch is down and locked. In this way the first pair of wheels opens the closed switch, which could not be opened by hand without first being unlocked.

All the above forms of switch stands are manufactured by the Pennsylvania Steel Company at Steelton, Pa., near Harrisburg.

Michigan Railroads in 1882-83.

We give below extracts from the report of Mr. Wm. P. Innes, Railroad Commissioner of Michigan, to whom we are indebted for advance sheets of his annual report. The figures given are for the year 1882, but the statements of new track and of the organization of companies are brought up to the close of November of the current year:

For the year 1882 the condition and business of 59 corporations were reported—two in excess of the previous year. The following companies were reported for the first time: The Bay View, Little Traverse & Mackinaw; the Cincinnati, Wabash & Michigan; the Grand Rapids, Indiana & Mack-

tion of new track of 650 miles, and seven new corporations have been created by consolidation.

The track mileage of 1882 reported for Michigan was 4,609 miles, as against 3,252.58 the previous year, an increase of 356.42 miles—8.97 per cent.

NEW ROAD IN 1883.

The year 1883 has proved an active one in the extension of old lines of road and in the construction of new. From the returns made to this office November 1, 1883, covering the new line already built, or certain to be completed and opened for traffic on Jan. 1 next, not before reported, I give figures as follows:

	Miles.
Chicago & West Michigan	12.98
Detroit, Bay City & Alpena	19.50
Flint & Pere Marquette	13.70
Michigan Air Line	74.30
Milwaukee, Lake Shore & Western	26.12
Marquette, Houghton & Ontonagon	42.24
Michigan & Ohio	155.10
Pontiac, Oxford & Port Austin	100.00
Total miles	414.04

But one other year in the history of the state shows a greater number of miles of railroad built than during the present. In 1871 559 miles were newly constructed. The above new track added to that reported at the close of 1882 gives an aggregate of 5,053.04 miles of railroad that will be opened for business at the commencement of the new year, and with the exception of a small area in the remote north-eastern portion, along the shores of Lake Huron, every

portion of Michigan has railroad connections with the commercial world.

TAKING UP RAILROAD TRACK.

In three instances since the organization of this department, have companies abandoned their lines of road and removed their tracks, as it would seem without authority of law for such proceedings.

My predecessor, in his last report, cites the Muskegon & Rose Lake Co. as having abandoned its road and torn up its track, and as it appears, leaving its taxes due to the state for the years 1880 and 1881 unpaid, and with no method available for enforcing their collection, as the stockholders and directors of the concern were residents of another state. Very recently the Chicago & West Michigan Co. has officially informed this department that it had taken up its track between Fruitport and Holland via Nuncia, a distance of 25 miles. It becomes a grave question for consideration whether a company, having once constructed a line of railroad under the franchises granted it by the state, and opened it for the public use, and by its location through a district of country induced people to make settlements, to build towns, and to invest large sums of money with the expectation that the railroad was a permanent improvement from which the advantages usual to railroads were sure to be realized, can, of its own pleasure, abandon its road, take up the track and leave the people and business communities on its line without the facilities to which good faith and frequently large contributions of material aid entitle them. If a street or public highway once opened and dedicated to the public use by the private owners of land cannot be vacated without due process of law there would seem to be still stronger reasons why a great public use like a railroad should not be abandoned by the corporation that built it without full indemnity to the people damaged by such abandonment. The question will be brought to the attention of the court by the Attorney-General.

STOCK AND DEBT.

The total stock and debt returned at the close of the year 1882 amounted to the sum of \$536,039,192, being \$55,697 per mile of road owned.

The debt of the railroad corporations during 1882 continued to increase and at the close of the year showed the following condition:

Funded debt.....	\$263,702,860
Floating debt.....	28,232,745
Not classified.....	16,366

Total..... \$291,951,972

Over the report of last year the above footing gives an increase of \$23,451,367. Per mile of road the debt now figures at \$31,968 as against \$23,408 last year, being an increase per mile of \$8,560.

TRAFFIC AND EARNINGS.

The traffic of the roads for the year was as follows:

	1882.	1881.
Revenue train miles.....	54,011,766	49,455,927
Service and switching miles.....	17,805,106	...
Passengers carried.....	24,158,093	18,914,933
Passenger miles.....	967,401,766	824,103,330
Tons freight carried.....	39,400,806	37,799,555
Ton-miles.....	5,781,580,167	5,747,847,631
Average rate:		
Per passenger-mile.....	2.720 cents.	2.380 cents.
Per ton-mile.....	0.973	0.920

The increase in passenger-miles reported, 28 per cent., was very large.

The earnings of all the roads reporting were as follows:

	1882.	1881.
Earnings.....	\$82,753,680	\$75,195,845
Expenses.....	54,643,741	50,271,575
Net earnings.....	\$28,109,948	\$24,924,270
Interest and rentals.....	19,382,626	17,137,471
Surplus.....	\$8,727,322	\$7,786,799

Eleven companies—the Chicago & Northwestern, the Chicago & West Michigan, the Detroit, Grand Haven & Milwaukee, the Detroit, Lansing & Northern, the Flint & Pere Marquette, the Fort Wayne & Jackson, the Lake Shore & Michigan Southern, the Marquette, Houghton & Ontonagon, the Michigan Central, the Mineral Range and the Port Huron & Northwestern—paid dividends. Two of these—the Chicago & Northwestern and the Lake Shore—have only a small part of their mileage in the state.

RAILROAD CROSSINGS.

The number of railroad crossings in the state at the close of the year was 84, of which six were over intersecting lines; the remainder being at grade. Exposed as railroad crossings of the latter character are to serious accidents, involving great loss of life and property, this state has hitherto, either from good fortune or commendable observance of the laws requiring trains to be brought to a full stop before attempting to cross the track of another road, been spared the occurrence of such accidents. But with the rapidly increasing number of these crossings, and the great delays incident to them, to the heavy traffic of the trunk lines, coupled with the detriment to the rolling stock resulting from the frequent stoppages required, the temptation to run the crossings or evade a strict compliance with the law becomes pressing, and it is to be feared that at times, from such cause, the danger of disaster is very imminent. Appreciating the great advantage it would be to the traffic of our railroad companies could their trains be permitted to pass at grade crossings without coming to a stop, the last Legislature so amended the law as to permit such passage of crossings, where the use of the interlocking switch and signal system or other device, to be approved by the commissioner of railroads, insures safety to the trains of the companies conceded such privilege. While there can be no doubt that the interlocking switch is a very effective appliance, and whenever used reduces the dangers of collision at grade crossings to the minimum, still the cost of its plant and the expense of its maintenance, will probably make it at other than the more important points where trains are frequently passing, of slow introduction. In view of this fact, and the practice which prevails on nearly all the roads of this state, notwithstanding the earnest efforts of this department to prevent it, of bringing trains to a stop at junction points so that they "hang over" the tracks of an intersecting line, I have thought my duty to the public would be more faithfully discharged by requiring the erection of suitable gates at all grade crossings not protected by other appliances. Acting upon that conviction I have recently issued a circular to the railroad companies of this state ordering the erection of such gates within 90 days from its receipt.

The number of highway crossings reported is something less than for the preceding year, aggregating 4,618 as against 4,714 for the previous report. Of these 4,366 are reported at grade without gates or flagmen; 103 at grade with gates or flagmen, 85 over track, and 64 below. There were 29 accidents at highway crossings during the last year, more than double the number for the previous year. While examination into the circumstances attending this class of accidents reveals the fact that they resulted, as

a rule, from a lack of sufficient caution on the part of the persons involved in them, still, they generally happened at points where obstacles or the conformation of the adjacent ground obscured the approach of trains, and where the use of some automatic signal of the existence of imminent danger would have probably saved the lives or limbs of the unfortunate sufferers. The adoption of such signals will be urged at especially exposed and dangerous points.

FENCING.

The report for 1882 indicates that nearly all the fencing of right of way along the lines of road, required by law through enclosed lands, has been completed. The total miles of fencing reported as built are 6,616.78, of which 832.42 had been completed or renewed during the year, 1,510 miles remain unfenced, mostly, it is presumed, in the forest districts of the state and north of the line, beyond which the penalty for failure to fence does not attach. The complaints noticed by my predecessor of the construction of new fences or the renewal of old board fences gone to decay along the railroad lines with wire, continue to be received at this office to a limited extent. It is not strange, perhaps, that the farmers so long used to the expensive and efficient barriers

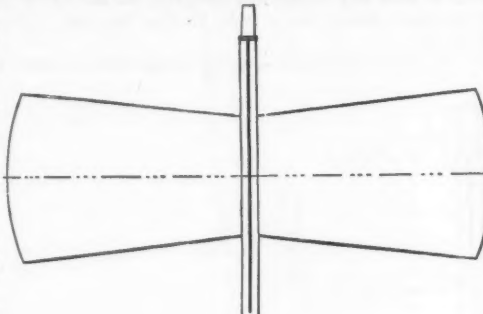
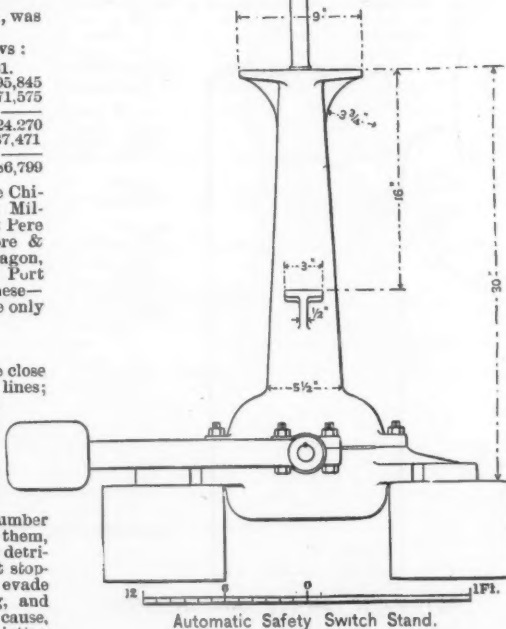


Fig. 5



afforded by the old-fashioned board fence, should at the first be dissatisfied with the substitution of the barbed wire, which while it has many qualities of suitability, which commend it to the railroad managers, among which are its cheapness, durability and exemption from destruction or damage by fire, has others not viewed so favorably by the farmers through whose inclosures it has been put in use. But inspection of the wire fence complained of, has generally disclosed indifferent construction or insufficiency of material, deficiencies, which, when corrected, have removed the reason for dissatisfaction, and on the whole I think the wire fence is meeting with more favor among those at first entirely unconvinced to its erection through their lands.

But as the law only provides that right of way fences should be of the height and strength of a division fence required by law, without prescribing the material of which they are to be constructed, I am of the same opinion as my predecessor, that the Commissioner of Railroads is only invested with authority to decide upon the sufficiency of fences after their completion, and not to prescribe the material or method of construction.

TAXATION.

The total taxes assessed against the railroad companies doing business in this state for the year 1882, including the special charter roads, amounted to the sum of \$655,791.53, an increase of \$79,854.65 from the preceding year. As the special charter roads are taxed upon their stock and debt instead of their earnings the taxes paid are not as large by a very considerable amount as they would be were the same basis of taxation adopted for all. Per mile of road the taxes paid are \$147.85.

No subject connected with the administration of railroad

affairs has provoked more discussion in the different states than that of the best and most equitable plan for railroad taxation.

In the larger number of states the system of local taxation has been adopted. That is, the properties are listed by the companies giving their estimated valuation in the taxing districts where situated. This valuation is generally equalized by some board having jurisdiction for such purpose, and the tax levied at the same rate as is established for other real estate. The value of equipments in use are reported by the companies and the amount is added to the valuation of the track upon a pro rata mileage basis.

This plan, while it finds considerable favor in some states still, I notice from the reports which reach the office, does not give general satisfaction, and in many of the states the people clamor for a change, and owing to the comparatively low valuation that seems to be placed per mile upon the railroads the taxes raised from railroad property are not, as a rule, in excess per mile of road of that realized under the method in force in Michigan, while the expense and labor necessary for the assessment and collection of such taxes are much reduced under our system.

I am of the opinion that the state would realize no advantage, but perhaps suffer detriment from a change in the method of taxing its railroads, a conclusion which the last Legislature seemed to reach, as after an exhaustive consideration of the subject a bill providing for the substitution of local taxation in lieu of specific was defeated by a decided vote against the measure. It is, however, unfortunate that all the properties could not be taxed upon the same plan. From the fact that two of our largest companies working under special charters have virtually absorbed and are operating under one management a large mileage of road constructed by corporations organized under the general railroad law, whose earnings are taxable separate from those of the companies by which they are leased, it becomes evident that there is room afforded for undesirable complications in fixing the amount of taxable income accruing to such leased roads, that were better avoided.

For convenience of reference I append a statement showing the amount of taxes assessed against the railroad companies in this state from 1877 to 1882 inclusive:

1877.....	\$376,769.31
1878.....	410,453.00
1879.....	445,390.80
1880.....	521,513.34
1881.....	575,836.88
1882.....	655,791.53

Total..... \$2,985,863.86

The large amount from this source is devoted to the use of our primary schools, and is distributed each year to the school children *per capita* through each school district in the state. In my judgment it would be difficult to make a better or more just disposition of the already large and constantly increasing fund derived from our specific railroad taxes.

ACCIDENTS.

The casualty report for 1882, while covering only four less accidents than for the preceding year, still is to some extent an improvement on the report for that period, owing to the very considerable increase in the number of persons exposed to danger and the number of train-miles run. During the year reviewed the whole number of accidents reported for Michigan was 507, of which 123 were fatal, and the remainder, 385, inflicting injuries not resulting in death. As classified the following appears to be the distribution of the list:

	Killed.	Inj'd.	Total.
Passengers.....	4	14	18
Employees.....	48	282	330
Others.....	70	89	1,500
Total.....	122	385	507

In the opinion of the officials who make up the casualty reports to this office only 61 of the long array of accidents were from causes beyond the control of the sufferers, the remainder happening from pure carelessness or want of proper caution on the part of those injured. Included in the latter class were 92 trespassers and tramps and 39 poor unfortunates (nearly all among the killed) who at the time of their death or injury were intoxicated. Of the 24,158,093 passengers carried during the year but four were killed, or one for every six millions and a fraction, and 14, or one for about every two millions were injured, but not fatally.

Of the 20,283 employees on the rolls for Michigan it appears that 48 were killed and 282 injured. This is an average of something over two in each thousand employed of the former, and almost 14 for each thousand of the latter.

Accidents arising from the coupling of cars continue to be the most frequent among employees. Last year 163 casualties from this cause were reported, which have increased this year to 173. I am informed that the Flint & Pere Marquette Co. has recently fitted up a number of freight cars with a newly-invented coupler in which they have great confidence as being the one so long needed. I shall hope to be able to report another year that their anticipations have been fully realized.

Next to the above mentioned cause of accident, and even more fatal than that, is the practice so strangely persisted in of making a footpath of railroad tracks. Forty-eight people were killed from such cause alone last year.

The deadly frog last year killed 4 and maimed 17 other employees, and the last Legislature passed a law requiring railroad companies to so "adjust, fill or block the frogs, switches and guard rails on their roads as to prevent the feet of employees or other persons from being caught therein." The law in question takes effect on Jan. 1 next, and I believe all the companies in the state are preparing to comply with its requirements. The Flint & Pere Marquette have been the first company to complete the blocking of their road under the provisions of the act, and the work has been performed in a thorough manner.

THE SCRAP HEAP.

The New York Central Brake School.

A. H. Catlin, Superintendent of brake equipments and passenger car distributor, of the Central-Hudson Railroad, arrived here yesterday afternoon with his air-brake car for instruction of employees. The car is a baggage car and is fitted up to represent a train of 25 cars, each car in the train having an auxiliary storage reservoir and air-brake cylinder. The storage reservoirs are charged with compressed air pumped in by the engine while the train is running between stations. The power for each car is stored underneath it. The power is let from the storage reservoir into the air-brake cylinder, which moves a piston and applies the brakes with a pressure of 5,000 pounds against each wheel. With a fair track a train of 10 cars moving at the rate of 40 miles an hour can be stopped within the distance of 800 or 1,000 ft. The brakes being automatic in action, any breakage of the hose coupling on the train they are immediately applied. The power can be applied from the engine or from any car by pulling a lever. Superintendent Catlin is going over the line instructing employees how to

manage the brakes and to remedy defects, breakages, etc. This knowledge makes the engineer master of any contingency that may arise while running a train. Mr. Catlin exhibited the working of the apparatus to a number of persons this forenoon at the Central train house. —*Rochester (N. Y.) Post-Express.*

No more Presents.

An order has been posted in the Pennsylvania Railroad shops prohibiting the soliciting of subscriptions for presents to be made to foremen of the different departments. The same order also forbids the soliciting of money for the benefit of brother employes. A great deal of this has been done, and it would be a strange pay day when a workman would not have a couple of subscription books shoved under his nose. Any of this kind of business to be done hereafter will have to be attended to outside. This order, coming so close to the holidays, spoils several presentations. —*Altoona (Pa.) Call, Dec. 13.*

Automatic Crossing Signals.

The Union Switch & Signal Co. has put up signals at the crossing of the Fitchburg and the Old Colony roads in Fitchburg, Mass., which were formally inspected by the Railroad Commissioners on Dec. 14. These signals are thus described by the *Boston Herald*:

"The signal tower contained an electric indicator, showing on which road and from which direction any train may be approaching, when it is a quarter of a mile distant. Nearly an eighth of a mile from the tower on each road is located a distant signal, and still nearer a home signal. Each is of the semaphore pattern. In the tower is a series of numbered levers, those for the distant signals being painted green, those for the home signals being red, those for the switches black and those for the locking arrangement blue. One man can thus very easily control the movements of all the trains. Every signal stands at danger until changed, and thus, if the switchman happens to fall asleep or for some other reason fails to attend to his duty, an accident is still impossible, for every train is stopped before reaching the crossing. Everything being at danger, suppose a Fitchburg train approaches from the east, the electric indicator sounds its alarm, the switchman pulls certain black levers, setting the switches properly, then a blue lever locking them, then a red lever dropping the home signal, and lastly, a green lever dropping the distant signal. Everything thus being opened for the Fitchburg train from the east before it reaches the distant signal, the engineman whistles off brakes, and the train continues its course without stopping. The levers are locked electrically, and cannot be moved until the train has passed the crossing, and neither can any lever be moved to open the way for a train on the Old Colony road. Should a train for any reason not heed the danger signals, and keep on its way, it would be unable to reach the crossing, for every track has a switch-off which would throw the train on to the ground some distance before the crossing was reached. The absolute safety of the whole arrangement having been demonstrated the Commissioners signified their approval, and, in accordance therewith, a special notice to employes, jointly issued by the management of the Fitchburg and Old Colony

Sunday Trains in Massachusetts.

The Massachusetts Railroad Commissioners have returned the following answer to a memorial from Rev. E. Alden and others in relation to the running of Sunday trains on the Old Colony Railroad:

"The Board has received from you the petition of the Pil-



grim Conference of Congregational churches, asking that measures may be taken for determining whether the running of trains through the old Pilgrim colony to the town of Plymouth is of such public necessity and convenience as to require by your authorization the running of said trains. Petitions in aid are received from the Church of the Pil-

"4. The power given to this Board to authorize the operation of trains on the Lord's day, when required by 'public necessity and convenience,' does not give power to prevent or forbid the running of such trains. That power is left with the courts and magistrates of the commonwealth.

"5. The act of 1881 was passed in order to meet the needs, occasional and exceptional, of certain trains running over the state railroad, and to save the state from appearing to violate its own laws. The numerous trains which are now run on the Lord's day upon the various railroads of the commonwealth are, none of them, run under the authority of that law or of this Board, and we have no power to forbid their operation.

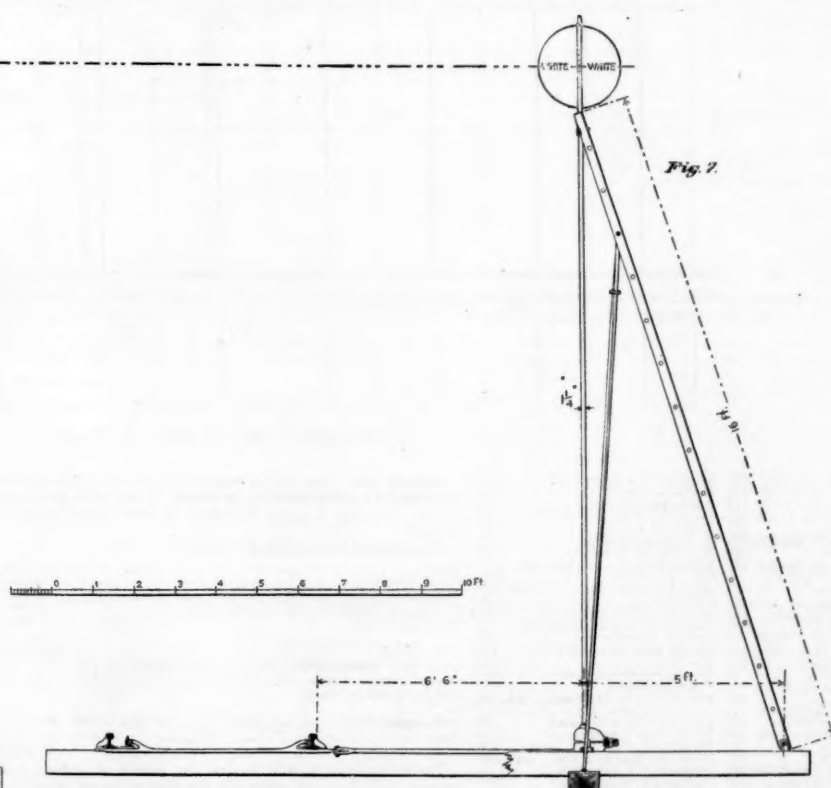
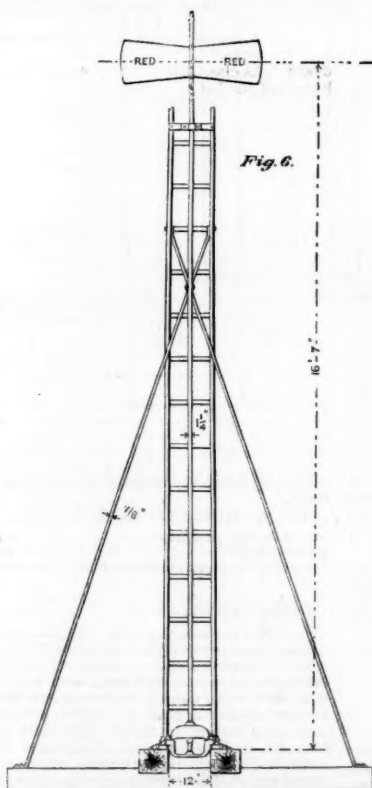
"6. Your best course will be to petition the Old Colony Railroad Co. not to run the train, sending your petition in good time, so that they may hear all parties before the opening of the summer season."

A Conscientious Conductor.

"How did I become Superintendent?" answered the railroad official. "Why, it was this way: I was conductor of the morning passenger express, and one day as we were coming down by the junction we struck a misplaced switch and ran into a freight train that was standing on the siding. As we were running about thirty-five miles an hour of course it piled things up a good deal. Our engine was smashed all to pieces, the smoker telescoped the baggage car, and the forward passenger coach ran up on the heap and rolled over. I was standing on the platform at the time the thing happened, and luckily was slung off about thirty feet beside the track. When I picked myself up everything was confusion, the air was filled with clouds of escaping steam, and about fifty passengers were somewhere in the wreck. Of course it was what you might call an 'emergency,' but there is no such word as that in the company's dictionary. I had my orders, and knew what to do. The roof of the smoking-car lay near me, and I heard a man crying out from underneath it. After about ten minutes' work I had the stuff all cleared away and reached him. He was very weak and groaning. 'Oh, heavens!' he said, 'this timber presses on me so I can't move. Both my legs are broken below the knee.' 'Think you'll be here till the next train?' I asked. 'Oh, yes,' he moaned. 'Then you'll need a stop-over check, sir,' I said, and I made out a paste board and gave it to him. 'Young man,' he said, 'I observe that you have neglected to fill in the day of the month, but, under the circumstances, your omission is excusable. I am a director of the company, and, if I survive, your attention to duty shall be rewarded.' The old gentleman pulled through and is now vice-president. That's how I'm Superintendent, and," he continued musingly, as he fingered his lantern watch-chain, "I believe in the old saying that the company has rights which the public is bound to respect, and rules which they must conform to." —*Life.*

A Troublesome Accident.

The turn table at the new round-house broke down at an early hour this morning, and as a consequence all the engines in the round-house, about 30 in number, cannot be got out upon the tracks. The part which broke was the large centre casting, and inasmuch as there is no duplicate of it



AUTOMATIC SAFETY SWITCH STAND.

railroads, was last night sent out, giving notice that the use of the semaphore signals at the Fitchburg grade crossing would commence at 6 a. m., Dec. 17, 1883, for permanent use."

Economizing.

At a meeting of the general officers of the various railways centering in Cincinnati yesterday, it was decided that after Jan. 1 employes living on lines other than their own shall be required to buy commutation tickets. Hitherto this class of suburban travel has been furnished with free transportation. It was also agreed that hereafter when application is made to local agents for money donations for exposition pageants and the like the local agent must not obligate his company, as has been the custom, to pay its proportion of the expense, but refer the matter, with or without its recommendation, to his general manager, who will confer with the general officers of the other lines, so that each road may have the opportunity to determine for itself what would be a fair and just assessment instead of letting outsiders do it for them as heretofore. —*Cincinnati News-Journal, Dec. 15.*

grimage and from the Second and Fourth churches in Plymouth; from the Pilgrim Congregational Church in Duxbury, the Mayflower Church in Kingston, the Congregational Church in Halifax, and from both the Methodist and the First Congregational churches in Marshfield. We desire to reply to these petitions fully and carefully, as the worth of the petitioners and the importance of the subject demand.

"1. The Old Colony Railroad Co. has never received nor asked authority from the Board to run any trains on the Lord's day. The running of the train in question began in 1874. The law giving this Board authority to allow the running of certain trains on the Lord's day was passed in 1881.

"2. If the train which the old Colony Railroad Co. runs in the summer months is legally run it is not because of that statute, but because such running is a 'work of necessity or charity,' and so falls within the general exception to the Sunday laws. If such running is not a work of necessity or charity it is illegal.

"3. The question whether the running of this train is illegal can only be settled by prosecuting the corporation, or one or more of the train hands, under the appropriate section of chap. 98 of the Public Statutes.

here it cannot be replaced until a new casting is obtained from Philadelphia. This will consume at least four days, and in the meantime none of the engines in the round-house can be moved or those out be taken in for shelter. This will make the Delaware and Eastern divisions short of motive power, and necessitate the available engines doing double duty. The passenger engines run by engineers M. L. Rose, John Kinsila and N. Taft on trains 5, 4, 1 and 8 on the Delaware division are all blocked in the round-house, as is also one of the engines of the Orange County express over the Eastern Division. —*Port Jervis (N. Y.) Gazette December 12.*

24 O'clock.

The train for New York on the Northeastern Railroad now leaves Charleston at 24:45 o'clock, according to the time-table. The North-bound train from Jacksonville leaves that city at 13:30, and arrives at Savannah at 19:30. The train for Charleston leaves Savannah at 19:50. The railroad agency at the Charleston Hotel is now run on this new series of hours, and has kept up with the procession by cutting out 12 new couples of figures, so as to make the old

timepiece do the double duty required of it.—*Charleston (S. C.) News and Courier.*

A Turkey Train.

On Sunday, Dec. 23, a special train will start from Hunter's Point on the Long Island road, carrying several officers of the road and 2,000 turkeys. The purpose is to run over the whole length of the road and to distribute the turkeys to the married employees for their Christmas dinners.

ANNUAL REPORTS.

The following is an index to the annual reports of railroad companies which have been reviewed in previous numbers of the present volume of the *Railroad Gazette*:

Page.	Page.
Alabama Great Southern.....478	Massillon & Cleveland.....495
Allegheny Valley.....495	Meadville.....495
Alliance, Niles & Ash.....495	Memphis & Charleston.....495
Ashtabula & Pittsburgh.....495	Mexican National.....495
Atchison, Topeka & Santa Fe.....495	Mexican Railway.....495
Atlanta & West Point.....495	Michigan Central.....279, 280
Atlantic & Pacific.....495	Milwaukee, Lake Shore & West.....280
Augusta & Knoxville.....495	Missouri, Kansas & Texas.....281
Baltimore & Ohio.....495	Missouri Pacific.....167, 230
Baltimore & Potomac.....495	Mobile & Girard.....495
Baltimore & Pennsylvania.....495	Mobile & Ohio.....495
Boston & Albany.....495	Montpelier & Wells River.....495
Boston, Barre & Gardner.....495	Morris & Essex.....495
Boston, Concord & Montreal.....495	Nash, Chattanooga & St. L.....495
Boston & Lowell.....495	Natchez, Jackson & Col.....495
Boston & Maine.....495	Naugatuck.....495
Boston & Providence.....495	New Brunswick.....495
Boston, Rev. Beach & Lynn.....495	New Castle & Beaver Vt.....495
Burr, Cedar Rapids & No.....495	New Haven & Northampton.....495
Camden & Atlantic.....495	New London Northern.....495
Canadian Southern.....495	N. Y. Cen. & Hudson River.....495
Canadian Government Roads.....495	N. Y. & Greenwood Lake.....495
Central Branch.....495	N. Y. Lake Erie & Western.....495
Central of Georgia.....495	N. Y. New Haven & Hartford.....495
Central Iowa.....495	N. Y. & New England.....495
Central of New Jersey.....495	N. Y. Ontario & Western.....495
Central Pacific.....495	N. Y. Penn. & Ohio.....495
Charlotte, Col. & Augusta.....495	N. Y. Susquehanna & Western.....495

Louisville & Nashville 510, 531, 571	Wisconsin Central.....629
Maine Central.....21	Woodstock.....109
Manchester & Lawrence.....395	Worcester & Nashua.....40, 824
Manhattan.....181, 755	York & Peachbottom.....355

Hartford & Connecticut Valley.

This company owns a line from Hartford, Conn., to Fenwick, at the mouth of the Connecticut River, 46.2 miles. The statements are for the year ending Sept. 30.

The present company succeeded to the Connecticut Valley Co. through foreclosure. The capital stock, which represents the first-mortgage bonds of the old company, is \$800,000. There is no bonded debt. The road is now controlled in the interest of the New York, New Haven & Hartford.

The earnings for the year were as follows:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passengers.....	\$115,672	\$102,699	I.	12.6
Freight.....	90,794	77,930	I.	16.5
Mails, etc.....	8,989	15,244	D.	41.5
Total.....	\$215,455	\$195,873	I.	10.0
Expenses.....	200,085	195,083	I.	2.6
Net earnings.....	\$15,370	\$790	I.	\$14,580
Gross earn. per mile.....	4.664	4.240	I.	4.24
Net.....	333	17	I.	316
Per cent. of exps.....	92.87	99.00	D.	6.73

The net earnings were applied to payment of floating debt, improvements of the road and similar purposes.

Long Island.

This company owns a main line from Hunter's Point, N. Y., to Greenport, 95 miles, with 87 miles of branches. It leases the Flushing & North Shore, the Brooklyn & Montauk and other branches, 172 miles in all, making 354 miles worked. Its system includes all the railroads on Long Island, except a few short lines at the western end. The report is for the year ending Sept. 30.

Both gross and net earnings last year are the largest ever reported by this road.

The income statement is as follows:

Net earnings as above.....	\$1,001,275
Interest.....	\$209,050
Rentals.....	282,466
Dividends, 4 per cent.....	400,000
	\$891,525

Surplus for the year.....\$109,750

Four quarterly dividends of 1 per cent. each were paid, the company having last year divided a surplus among its stockholders for the first time in its long history.

It is understood that no rental was paid to the Brooklyn & Montauk Co. for its road on account of the large amount due from that company for betterments made on the line.

Richmond, Fredericksburg & Potomac.

This company owns a line from Richmond, Va., to Quantico, 83 miles. The following statements for the year ending Sept. 30 were presented at the recent annual meeting in Richmond.

The equipment consists of 15 locomotives; 16 passenger, 2 postal and 6 baggage cars; 51 box, 44 flat, 1 coal and 9 caboose cars; 18 service or road cars.

The earnings for the year were as follows:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Transportation.....	\$468,182	\$437,516	I.	30,666
Rentals.....	2,339	2,359	I.	40
Total.....	\$470,521	\$439,875	I.	\$30,606
Expenses.....	276,180	267,331	I.	8,849
Net earnings.....	\$194,401	\$172,544	I.	\$21,857
Gross earn. p. mile.....	5.641	5.299	I.	342
Net.....	2,342	2,079	I.	263
Per cent. of expenses.....	58.69	60.77	D.	2.08

The increase in both gross and net earnings was very considerable.

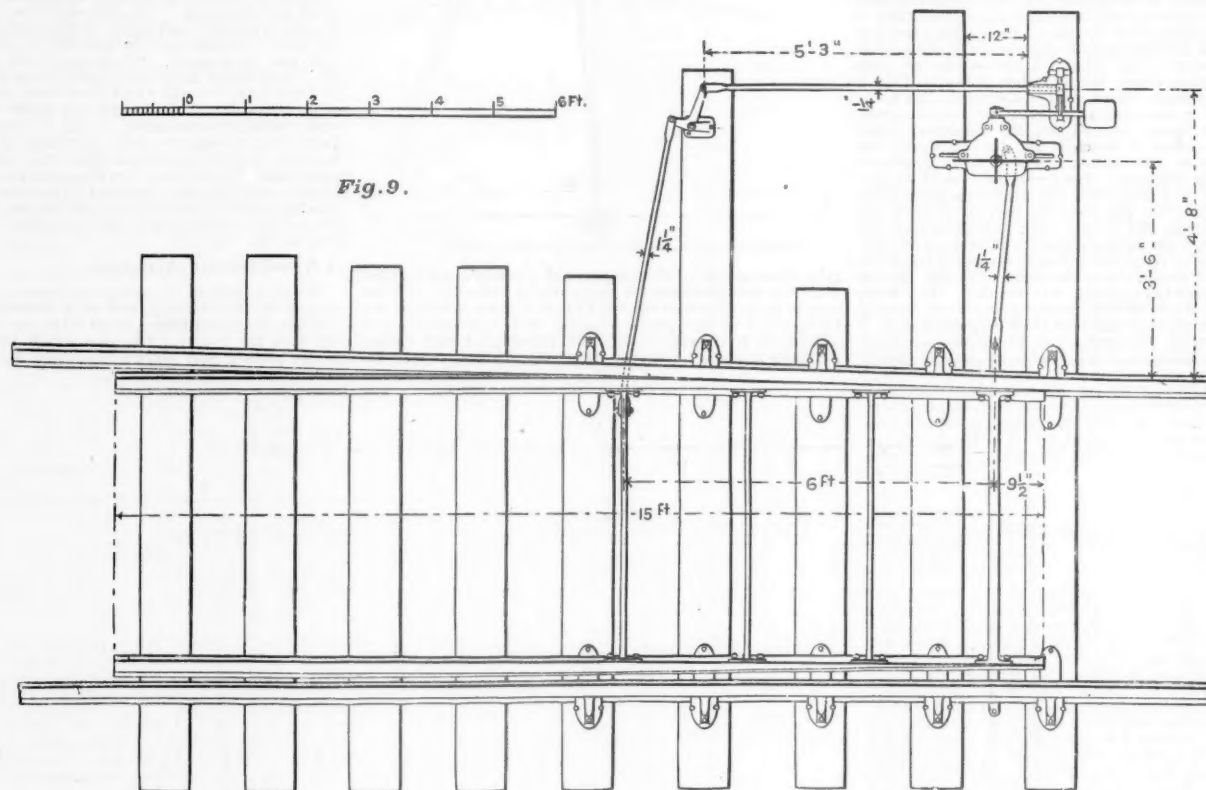


Fig. 9.

AUTOMATIC SAFETY SWITCH STAND.

Chesapeake & Ohio.....138, 575	Norfolk & Western.....180
Chesapeake & Potomac.....539, 772	Northeastern (S. C.).....824
Chicago & Alton.....132, 143	Northern Central.....423
Chicago, Bur. & Quincy.....190, 230	Northern (New Hampshire).....340
Chicago & Eastern Ill.....707	Northern Pacific.....636
Chl. Mil. & St. Paul.....167, 263, 395	Northern Ohio.....495
Chl. & Northwestern.....343	Norwich & Worcester.....495
Chl. Rock Island & Pacific.....340, 443	Ogdensburg & L. Champlain.....407
Chl. St. P., Minn. & Omaha.....330	Ohio Central.....629
Chl. & West Michigan.....495	Ohio & Mississippi.....105, 698
Cincinnati & Eastern.....463	Old Colony.....705
Cincinnati, Ham. & Dayton.....495	Oregon Improvement Co.....278
Cin. Ind. St. Louis & Chl.....653	Oregon Ry. & Navigation Co.....773
Cincinnati, N. O. & Tex. Pac.....39, 346	Oregon & Transcont. Co.....611
Cleve. Col. Cin. & Ind.....181, 185	Pacific Mail Steamship Co.....478
Cleveland & Pittsburgh.....39, 495	Panama.....231
Columbia & Greenville.....59	Pennsylvania Company.....494
Columbus, Hocking Vt. & Tol.....705	Pennsylvania & N. Y.....79
Concord.....356	Pennsylvania Railroad.....150, 164
Connecticut Minor Railroads.....824	Peoria, Decatur & Evansville.....652
Conn. & Passumpsic Rivers.....605	Philadelphia & Reading.....29
Connecticut River.....105, 750	Phila. Wtl. & Baltimore.....189
Cumberland Valley.....725	Pittsburgh, Cin. & St. Louis.....312
Danbury & Norwalk.....722	Pitts. Ft. Wayne & Chl.....340, 495
Delaware & Hudson Canal.....100, 132	Pittsburgh & Lake Erie.....40
Delaware, Lacka. & Western.....132	Portland & Ogdensburg.....100
Del. Lac. & W. Leased Lines.....497	Portland & Rochester.....100
Des Moines & Fort Dodge.....362	Port Royal & Augusta.....723
Denver & Rio Grande.....362	Providence & Worcester.....104
Detroit, Lansing & No.....629	Pullman's Palace Car Co.....705
Eastern.....755, 849	Richmond & Petersburg.....824
E. Tenn. Va. & Ga.....609	Rochester & Pittsburgh.....41
Erie & Pittsburgh.....495	Rutland.....511
European & North American.....720	St. Joseph & Western.....477
Evansville & Terre Haute.....250	St. L. Alton & Terre Haute.....651
Fitchburg.....40, 737	St. L. & Cairo.....639
Flint & Pere Marquette.....393	St. Louis, Iron Mt. & So.....107, 231
Georgia.....312, 742	St. L. Vandalia & Terre Haute.....346
Georgia Pacific.....824	St. Paul & Duluth.....104
Grand Rapids & Indiana.....351	St. Paul, Minn. & Manitoba.....510, 650
Grand Trunk.....59, 329, 725	Savannah, Florida & West.....312
Green Bay, Winona & St. P.....723	St. Louis City & Pacific.....213
Gulf, Col. & Santa Fe.....693	South Carolina.....121
Hannibal & St. Joseph.....167	Southern Pacific.....598
Hanover Junc. Han. & Gettysb.....355	Sullivan County.....427
Hartford & Conn. Western.....7	Sussex.....407
Houston & Texas Central.....190	Terre Haute & Indianapolis.....362
H. attington & Broad Top.....121	Texas & Pacific.....331
I. & N. Central.....167, 180, 183	Toledo, Ann Arbor & Gd. Trk.....510
Indiana, Bloom. & Western.....493	Union Pacific.....194
Indianapolis & Vincennes.....495	Utah Central.....246
International & Great No.....231	Valley of Ohio.....280
Jeffersonville, Madison & Ind.....495	Vermont Valley.....497
Kan. City, Ft. Scott & Gulf.....707	Vicksburg & Meridian.....596
Kentucky Central.....246	Virginia Midland.....596
Lake Erie & Western.....351	Wabash, St. Louis & Pac.....167, 180
Lake Shore & Mich. So. 275, 298, 306	Warren.....497
Lawrence.....495	Western R. R. Association.....307
Lehigh Coal & Navigation Co.....138	Western Union Telegraph.....673
Lehigh Valley.....73	West Jersey.....628
Little Rock & Ft. Smith.....378	West Va. Central & Pittsburgh.....312
Long Island.....73	Wilmington & Northern.....568

During the year there was an increase of three miles in the branches owned, and a decrease of one mile in branches leased, making a total increase of two miles in the road worked.

The general account is as follows:

Stock.....	\$10,000,000
Funded debt.....	5,394,019
Unfunded debt, current accounts, etc.....	256,490
Contingent liabilities for leased roads.....	1,250,000
Profit and loss.....	556,527
Total.....	\$17,457,036
Road and equipment.....	\$13,741,771
Cost of leased lines.....	1,349,622
Due from other roads.....	843,841
Materials.....	67,139
Cash assets.....	1,355,742
Cash.....	98,921
	17,457,036

The contingent liabilities are for bonds of leased roads guaranteed; they are offset by the cost of leased lines on the other side of the account.

The traffic for the year was as follows:

	1882-83.	1881-82.	Increase.	P. c.
Passengers carried.....	9,024,370	8,878,453	145,917	1.6
Passenger-miles.....	81,166,204	83,867,296	2,701,092	8.7
Tons freight carried.....	416,153	386,260	29,893	7.7
Ton-miles.....	16,249,111	14,558,981	1,690,130	11.6
Av. rate.....				
Per passenger-mile.....	1.859 cts.			
Per ton-mile.....	4.423 "			

The average passenger journey last year was 10.10 miles; the average freight haul was 39.05 miles. The road has a very large business in suburban and pleasure travel, the great majority of the passengers traveling only short distances. The business is entirely local.

The earnings for the year were as follows:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passengers.....	\$1,695,177	\$1,608,771	I.	\$86,406
Freight.....	718,743	634,698	I.	84,045
Express.....	218,184	114,023	I.	104,161
Miscellaneous.....	52,985	59,565	D.	6,580
Total.....	\$2,685,089	\$2,417,057	I.	\$268,032
Expenses.....	1,683,814	1,576,774	I.	107,040
Net earnings.....	\$1,001,275	\$840,283	I.	\$160,992
Gross earn. per mile.....	7.585	6.867	I.	718
Net earn. per mile.....	2.828	2.387	I.	441
Per cent. of exps.....	62.71	65.24	D.	2.53

siderable, while the increase in expenses was comparatively small.

The income account was as follows:

Net earnings, as above.....	\$104,401.20
Interest paid.....	\$57,349.82
Dividends on guaranteed stock.....	34,835.00
	\$92,146.38

Surplus for stock, etc.....\$102,216.38

For the previous year the surplus was \$76,839.83, showing an increase last year of \$25,377.05, or 33 per cent.

The President's report says: "This increase of profit warrants an increase of dividend, and it is hoped that a rate of at least 5 per cent. per annum can hereafter be made."

"The control of more ground to accommodate the rapidly increasing freight traffic of your road having been thought desirable in February last, a purchase was made of about 1,035 ft. frontage on both sides of the track adjoining the Broad street (Richmond) depot property on the north, for \$7,000."

"In order to furnish business and increase the receipts of the road during the dull period of the summer months, and also to provide a supply of water for locomotives in a suitable locality, the company bought 210 acres of land near Ashland for \$3,038 and expended about \$2,500 thereon in making a large pond, building a pavilion and otherwise adorning the grounds to attract excursionists. The added receipts during the excursion season testify to the wisdom of this investment."

"During the year the company has sold several lots of ground, which it could not use, which yielded no revenue, and upon which it was compelled to pay taxes."

"In July last a decision was rendered in the Circuit Court of the city of Richmond sustaining the action taken by you at your meeting of Nov. 16, 1881, authorizing the issue of dividend obligations. From this decision an appeal has been taken to the Supreme Court of this State."

New York, Providence & Boston.

This company owns a line from Providence, R. I., to Groton, Conn., 62½ miles, with a branch to Warwick, R. I., 9½ miles, making 72½ miles in all. There are 63 miles of second track and 12½ miles of sidings, making 188½ miles of track, of which 115½ miles are laid with steel. The company also works under contract the Pawtuxet Valley

Branch, from Washington, R. I., to Hope, 11 miles. The report is for the year ending Sept. 30.

The equipment consists of 30 engines; 42 passenger and 12 baggage cars, and 12 baggage-cars; 162 box, 125 flat and 97 coal and gravel cars. The company also owns its proportion of 13 passenger and 2 baggage cars used on the steamboat train between Boston and Stonington, and of 19 passenger, 10 parlor, 8 sleeping, 2 postal and 9 baggage cars on the Shore Line between New York and Boston.

The general account is as follows, condensed:

Stock.....	\$3,000,000.00
Funded debt.....	1,300,000.00
Profit and loss.....	789,499.27
Total.....	\$5,089,499.27
Road and extensions.....	\$3,844,533.92
Steam ferryboats.....	157,140.01
Stock, Prov. & Ston. S. S. Co.....	804,900.00
" Narragansett Pier R. R.....	15,000.00
" Wood River R. R.....	20,000.00
Materials and supplies.....	89,425.72
Cash and cash assets.....	158,499.62
Total.....	\$5,089,499.27

In addition to the property already named the company owns, as shown in the accounts, two steam ferryboats; also a controlling interest in the Providence & Stonington Steamship Co., whose lines run between Stonington and New York.

The traffic for the year was as follows:

Train miles:	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passenger.....	548,057	431,731	I.	26.9
Freight.....	143,468	148,951	D.	5.483
Other.....	66,205	60,671	I.	5.534
Total.....	757,730	641,353	I.	18.1
Passengers carried.....	1,167,912	1,026,495	I.	14.117
Passenger-miles.....	27,016,757	23,836,502	I.	13.180
Tons freight carried.....	413,001	394,631	I.	4.6
Ton-miles.....	15,384,287	14,700,005	I.	4.7
Av. train load:				
Passengers, No.....	49	55	D.	10.5
Freight, tons.....	107	99	I.	8.1

Of the passengers carried 230,581 were through, 730,029 local and 217,302 commuters. Of the freight carried 255,643 tons were through and 157,350 tons local. On the Pawtuxet Valley road (not included above) 128,835 passengers were carried, 1,378,473 miles, and 56,365 tons of freight were moved.

The earnings for the year were as follows:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passengers.....	\$598,766	\$562,001	I.	6.5
Freight.....	450,613	432,808	I.	4.1
Mail and express.....	46,767	47,112	D.	345
Rents, etc.....	19,173	12,510	I.	5.3
Net, Pawtuxet Vy. Br.....	18,126	11,210	I.	61.7
Total.....	\$1,133,445	\$1,065,650	I.	6.4
Expenses.....	714,305	690,571	I.	3.4
Net earnings.....	\$419,140	\$375,079	I.	11.7
Gross earn. per mile.....	15,061	14,724	I.	937
Net.....	5,794	5,182	I.	11.7
Per cent of exps.....	63.2	64.80	D.	1.78

The expenses include \$30,026 for taxes and \$15,532 for extraordinary renewals and improvements of road and equipment. No dividends were received on the steamboat stock.

The income account was as follows:

Net earnings, as above.....	\$419,139.48
Interest, balance of account.....	\$80,286.20
Dividends, 8 per cent.....	240,000.00
Total.....	\$739,425.68
Surplus for the year.....	\$98,853.28
Cash assets, Oct. 1, 1882.....	228,091.46
Total.....	\$326,944.74
New equipment.....	\$78,632.97
Real estate, second track, etc.....	89,812.15
Total.....	\$168,445.12

Cash assets, Sept. 30, 1883.....\$158,499.62

There were used in renewal last year 2,000 tons of steel rails. The report says: "There has also been expended for construction, equipment, real estate, second track from Stonington to Mystic, and in other improvements, the further sum of \$168,445.

"The item of \$6,472, for Union Block Signals between Providence and Auburn is a judicious and necessary outlay, on account of the large number of trains to and from the Pawtuxet Valley and Warwick branches, in addition to the regular trains on main line. The signals are automatic, and so far have given entire satisfaction.

"The expenditures for real estate include the interest of the A. & W. Sprague Manufacturing Co. in the company's property at Harbor Junction; also a plot of 1 1/4 acres, adjoining the road just west of Acorn street, and to which it is intended to remove the engine house from its present location at no distant day, and some minor purchases for gravel pits and turnouts at other points along the line.

"At Harbor Junction, the company now owns, free from all incumbrance, about 30 acres of upland, and 60 acres of flats, extending more than 600 feet on the harbor line; all within the Providence city limits.

"There has been expended during the year for new rolling stock the sum of \$88,633, less \$10,000 received from the sale of five old engines, which were worn out and utterly useless for the business of this road.

"As will be seen, the work done shows a constant increase. The total mileage of all trains is 116,377 in excess of last year; number of passengers carried is 141,417 more, and tons of freight 18,370, all being done without injury to passengers or damage to property; for which result we are again indebted to the watchful care of the Superintendent and his subordinates.

"In our last report reference was made to the proposed bridge across the Thames River at New London, including a brief statement of what had been done in the way of necessary legislation, and what still remained. We have now the pleasure to report that all legal obstacles have been removed, Congress at its last session having passed a bill authorizing the construction of the bridge, on plans to be approved by a board of Government officers, to be appointed by the Secretaries of War and Navy. In accordance with the Act of Congress, the board was appointed, and convened at New London in July last, and after a long and patient hearing of all the evidence against the bridge which could be produced by its opponents, and the arguments of counsel on the same side, the plans submitted were approved, and we were authorized to go on with its construction. The right to build the bridge being vested in this company alone there now remains only a satisfactory arrangement with connecting lines for their interest in it, and its use when completed, negotiations for which are in progress, with a fair prospect of success.

"Improvements of terminal facilities at Providence remain in statu quo; but the commission still has the matter under consideration, and it is hoped will succeed in devising some plan for this great and much-needed work, which shall prove acceptable to the railroads as well as to the city."

New York Central & Hudson River.

The annual report of this company to the New York Railroad Commission for the year ending Sept. 30 last, which is the only report which the company makes public,

has been issued, and from it the figures given below are derived.

The road worked is as follows:

The road worked is as follows:		Miles.
Main line, New York to Buffalo		441.75
Branches owned		306.99
Branches leased		244.55
Total road worked		993.29
Second, third and fourth tracks		1,124.57
Sidings		567.02
Total mileage of track		2,684.88
The mileage of road worked and of second, third and fourth tracks was not changed during the year; there were 27.37 miles of new sidings built, making an addition of 27.37 miles to the total mileage of track.		
The equipment owned at the close of the year, as compared with that in use a year before, was as follows :		

The mileage of road worked and of second, third and fourth tracks was not changed during the year; there were 27.37 miles of new sidings built, making an addition of 27.37 miles to the total mileage of track.

The equipment owned at the close of the year, as compared with that in use a year before, was as follows:

	1883.	1882.	Increase.
Locomotives.....	655	632	23
First-class passenger cars.....	361	341	20
Dining cars.....	2	97	2
Second-class and emigrant cars.....	97	97	0
Baggage, mail and express cars.....	178	158	18
Total passenger train cars.....	638	596	40
Freight cars.....	25,511	24,565	946

This is 0.66 locomotive, 0.64 passenger-train car and 2.57 freight cars per mile of road worked.

The company owns 5 grain elevators, having a total capacity of 3,450,000 bushels, which was not increased during the year.

The general balance sheet at the close of the year is as follows, somewhat condensed:

Liabilities:	
Capital stock.....	\$89,428,300.00
Funded debt.....	49,997,232.33
Unfunded debt.....	4,689,242.71
Income and earnings.....	16,127,199.35
Total.....	\$160,241,975.39
Assets:	
Road and equipment.....	\$114,731,917.59
Consolidation certificates representing add. cost of road to this company.....	31,157,904.00
Hudson River bridges.....	1,914,951.94
Real estate.....	1,073,500.36
Dunkirk, All. Vy. & Pitts. R. R.....	2,920,621.09
Geneva & Lyons R.R.....	351,889.93
Advances on Harlem construction account.....	317,993.40
Stocks and bonds owned.....	3,179,919.77
Fuel and supplies on hand.....	1,874,569.45
Cash on hand.....	376,374.31
Station balances.....	1,098,419.75
Connecting railroad and other balances.....	690,413.20
United States.....	186,297.76
Equipment Harlem line.....	474,394.22
Sundry open accounts.....	32,803.62
Total.....	\$160,241,975.39

The amount of capital stock remains the same as last year. The funded debt shows an increase of \$1,524,200, of which no further explanation is given beyond the statement in the profit and loss account that there was received \$735,150 for premium on bonds sold, which would be about 48 per cent. on the increase.

Unfunded debt, which includes the current accounts and balances, etc., shows a decrease of \$565,127.22 during the year. There is no floating debt proper, the current balances making up the whole amount.

The company now holds none of its own stock; last year it held \$184,200, which has apparently been sold, accounting for the \$46,764.50 premium on stock which appears in the profit and loss account.

Notable changes in the minor accounts are large decreases in cash on hand and in the balance due from the United States, and large increases in the station and connecting railroad balances.

In the stocks and bonds owned there was a decrease of \$189,000 in Syracuse, Geneva & Corning bonds, and increases of \$483,900 in the Merchants' Dispatch; \$10,000 in Pittsburgh & Lake Erie, and \$510,287.83 in Morris Run Coal Co. To this account there was added also during the year \$110,000 Lamolite Valley Extension bonds.

The increase in cost of road and equipment during the year was \$1,974,982.05. This was made up as follows:

Grading and masonry.....	\$156,058.79
Bridges.....	153,913.95
Superstructure, 27.37 miles additional sidings.....	95,795.00
Buildings.....	329,141.30
Land damages and fencing.....	94,578.06
Engineering and agencies.....	5,592.50
Total construction.....	\$1,135,049.60
Locomotives, 23.....	\$207,000.00
Two dining, 20 passenger and 18 baggage cars.....	165,600.00
New freight cars, 946.....	492,632.45
Total.....	\$2,000,282.05
Less real estate, etc., sold.....	25,300.00
Net increase in cost of road.....	\$1,974,982.05

The chief item is the elevated road through Rochester, for which \$740,678.15 was charged under various heads.

The traffic for the year was as follows:

Train miles:	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passenger.....	5,801,461	5,448,929	I.	6.5
Freight.....	11,038,556	10,912,064	I.	1.2
Total.....	16,840,017	16,360,993	I.	2.9
Passengers, through.....	108,584	207,496	D.	38,912
Passengers, local.....	10,578,341	10,101,483	I.	476,858
Total.....	10,746,925	10,308,979	I.	437,946
Passenger-miles.....	429,385,561	432,243,282	D.	2,857,721
Tons freight, through.....	1,813,320	2,106,707	D.	293,387
Tons freight, local.....	9,079,120	9,223,086	D.	144,566
Total.....	10,892,440	11,330,393	D.	437,953
Ton-miles.....	2,200,896,780	2,294,799,310	D.	193,902,530
Av. train load:				
Passeng., No.....	74	79	D.	5
Freight, tons.....	199	219	D.	9.1

The usual classification of freight is given as follows, in tons: Products of the forest, 899,815; products of animals, 757,401; vegetable food, 2,742,620; other agricultural products, 565,101; manufactures, 1,359,237; merchandise, 1,715,245; other articles, 2,923,031. The decrease in tonnage was in products of animals, manufactures, merchandise and other articles. As stated more in detail, there was an increase in flour and lumber; small decreases in grain, live stock, oil and coal, and large decreases in iron and iron ores.

Of the tons carried through east-bound formed 13 per cent.; through west-bound, 3; way east-bound 51, and way west-bound 83 per cent.

The average passenger journey last year was 40 miles, and the average freight haul 202 miles, against 42 and 211 miles in 1881-82.

The earnings per train mile and per unit of traffic were as follows:

	1882-83.	1881-82.	Increase.	P. c.
Per passenger train mile:				
Earnings.....	\$1.47	\$1.43	\$0.04	2.8
Expenses.....	0.96	0.92	0.04	4.3
Net earnings.....	\$0.51	\$0.51	.....	.....
Per freight train mile:				
Earnings.....	1.82	1.62	\$0.20	12.3
Expenses.....	1.37	1.31	0.06	4.6
Net earnings.....	\$0.45	\$0.31	\$0.14	45.2
Per passenger mile:				
Earnings.....	1.98 cts.	1.80 cts.	0.18 ct.	10.0
Expenses.....	1.30 "	1.15 "	0.15 "	13.0
Net earnings.....	0.68 ct.	0.65 ct.	0.03 ct.	4.6
Per ton mile:				
Earnings.....	0.91 "	0.73 "	0.18 "	24.7
Expenses.....	0.68 "	0.60 "	0.08 "	13.3
Net earnings.....	0.23 ct.	0.13 ct.	0.10 ct.	76.9

The increase in earnings per ton-mile was remarkable, nearly 25 per cent., and accounts for the increased freight earnings on a diminished tonnage. The loss in tonnage was almost entirely in through freights, the local tonnage differing but little from that of last year. This partly accounts for the increase in the average rate.

The earnings for the year were as follows:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passengers.....	\$8,526,843	\$7,816,519	I.	\$710,324
Freight.....	20,142,433	17,672,252	I.	2,470,181
Mails.....	690,469	684,689	I.	5,780
Rents.....	1,305,586	1,305,580	D.	41,974
Car service.....	996,334	1,067,115	D.	70,781
Telegraph.....	7,912	6,223	D.	1,311
Interest.....	493,630	272,874	I.	220,756
Use of road.....	306,915	291,424	I.	15,491
Other sources.....	1,342,600	1,509,125	D.	166,525
Total.....	\$33,770,722	\$30,628,781	I.	\$3,141,941
Expenses.....	20,759,594	19,305,074	I.	1,354,620
Net earnings.....	\$13,020,128	\$11,232,807	I.	\$1,787,321
Gross earn. per mile.....	33,999	30,836	I.	3,163
Net earn. per mile.....	13,108	11,369	I.	1,739
Per cent. of exps.....	61.44	63.32	D.	1.88

The gross earnings last year were the largest in the history of the road.

It will be remembered that this company includes in its gross earnings the whole amount received for car service, and includes in its expenses the whole amount paid, thus differing from the usual custom, which is to charge or credit, as the case may be, only the difference between the amounts paid and received.

The result of the year's operations was as follows:

	1882-83.	1881-82.
Net earnings.....	\$13,020,128	\$11,232,807
Interest.....	\$3,432,308	\$3,250,101
Rent of leased lines.....	1,937,528	1,917,528
State tax on capital.....	178,489	178,489
State tax on earnings.....	144,647	122,785
Total charges.....	\$5,692,972	\$5,488,903
Surplus for dividends.....	\$7,327,156	\$5,743,904
Dividends paid, 8 per cent.....	7,148,132	7,145,513
Surplus or deficit.....	\$179,024	\$1,401,609

The dividends paid in each year were four quarterly of 2 per cent. each, making 8 per cent. in all.

The surplus revenue last year was \$8.19 per share, against \$6.42 in the preceding year.

The profit and loss account for the year was as follows:

Surplus, Sept. 30, 1882.....	\$15,341,055.84
Premium on bonds sold.....	735,150.00
" stock.....	46,764.50
Total.....	\$16,122,970.34
State tax on capital and earnings.....	174,794.99
Balance.....	\$15,948,175.35
Surplus earnings for the year.....	179,024.60
Surplus, Sept. 30, 1883.....	\$16,127,199.95

The average number of persons employed was 15,355, against 15,380 the previous year. The number last year was 15 1/2 per mile of road worked. The total amount paid in salaries was \$8,401,208, or an average of \$547 per man, against \$527 per man in the previous year.

The amount thus paid for personal services was 40.5 per cent. of the total working expenses, or 24.9 per cent. of the gross earnings. That is, about one-fourth of the total receipts of the company were required to pay the wages of the persons in its service.

Richmond & Allegheny.

This company owns a line from Richmond, Va., to Lynchburg, 230 miles, with a branch from Balcony Falls to Lexington, 20 miles. It leases the Henrico road, from Lorraine to Hungary, 11 miles, making 261 miles worked. The road was built on the line of the old James River & Kanawha Canal. The statements below for the year ending Sept. 30 were presented at the annual meeting last week.

The stock is \$5,000,000. The bonded debt consists of \$4,925,000 first mortgage 7 per cent. bonds, \$974,000 second mortgage 6 per cent. bonds, and \$97,000 construction bonds. Interest is not paid, and the road is now in the hands of receivers, pending proceedings in foreclosure.

The earnings for the year were as follows:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Freight.....	\$971,782	\$971,782	.....	.....
Passengers.....	167,990	.....	.....	.....
Express.....	17,089	.....	.....	.....
Rents, etc.....	78,466	.....	.....	.....



Published Every Friday.
CONDUCTED BY
S. WRIGHT DUNNING AND M. N. FORNEY.

EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

THE NEW YORK CENTRAL REPORT.

The report of the New York Central & Hudson River Railroad for the year ending with September last is satisfactory, as showing a large increase in gross and net earnings over the previous year, and the largest gross earnings in the history of the road; but decidedly unsatisfactory as showing a decline in traffic, which, in the case of freight, is after a decline in the previous year. In passenger traffic the decrease is very small (less than 1 per cent.), and, as in 1881-82, the passenger traffic was much larger than ever before. It cannot be said that last year's passenger traffic was unsatisfactory. It was, indeed, quite the contrary; the decrease was wholly in through passengers, and there was an increase in the local travel and a very large increase in the average rate per passenger mile, which was doubtless due not only to a greater proportion of local travel (which on this road pays little more than through travel), but to a better maintenance of through fares. The result was larger passenger earnings than the road has ever had before. The decrease in freight traffic, however, was large (8 per cent.), but it was also chiefly in through freight, and in all probability was due to a diversion of traffic to other roads—to the new Lackawanna road, which took a very considerable amount of low-class west-bound freight during most of the year, and to the Erie, which increased largely its west-bound through freight in the last three months of the year. But here, again, a higher average rate enabled the New York Central to increase its freight earnings in spite of the reduced amount of traffic, though it did not make the freight earnings equal to those of 1880-81, and much less to those of the phenomenal year 1879-80.

The year which is covered by the report was not, generally speaking, one of great industrial prosperity and growing traffic, but it was one in which much larger quantities of farm products were shipped than the year before, and rates were much better maintained during it. Indeed, for no less than nine months of the fiscal year 1881-82, the heavy and usually profitable through west-bound traffic from the seaboard was carried at war rates, and for five or six months of it the heavier east-bound traffic was also carried entirely without profit, and through passenger rates were also terribly demoralized for some months. Thus the year compared with was so bad a one that a very considerable improvement was necessary to make a fair showing, as may be seen by the fact that the profit per share of stock, which was \$11.82 in 1880, and \$8.82 in 1881, fell to \$6.43 in 1882,

and the improvement of last year has only brought it up to \$8.19.

Special circumstances have worked against this road for a few years past. It was and is the largest carrier of through traffic, and there has been such a construction of new roads and redistribution of old ones as to increase the competition for this traffic. The Grand Trunk and the Erie have but recently extended their control to lines in the West; and the Lackawanna has come in as a wholly new trunk line. The great growth of the iron industry and the increase in coal production were of enormous benefit to the three trunk lines further south, but of comparatively little to the New York Central. There has been especially increased competition for the New England traffic of late years, this having been before the great preserve of the New York Central, while in it now the Pennsylvania and the Erie, as well as the Grand Trunk, have a considerable business.

The course of traffic on the New York Central for the last 15 years may be traced in the following table, in which the figures are for the number of millions of passenger and ton miles:

Year.	Pass. miles.	Ton miles.	Year.	Pass. miles.	Ton miles.
1868-69.....	341.1	608.5	1876-77.....	316.8	1,620.0
1869-70.....	346.9	788.7	1877-78.....	300.3	2,042.8
1870-71.....	313.2	905.9	1878-79.....	291.0	2,295.8
1871-72.....	342.3	1,042.0	1879-80.....	330.8	2,525.1
1872-73.....	364.4	1,277.5	1880-81.....	373.8	2,646.8
1873-74.....	356.8	1,391.6	1881-82.....	432.2	2,394.8
1874-75.....	338.9	1,404.0	1882-83.....	429.4	2,300.9
1875-76.....	353.1	1,674.4			

The passenger traffic, as we have said before, was much larger last year than in any year previous to 1882—15 per cent. more than in 1881, when it was larger than in any previous year. But the freight traffic was not only less than last year, but it was smaller than in any other year since 1878 and was 16½ per cent. less than in 1881. This is noticeable not only because unprecedented in the history of this road, but because it is very unusual in the history of American railroads generally. Freight traffic sometimes stands still, as it did on Erie for four or five years before 1878; it sometimes falls off a little from a good year to a bad one; but it rarely declines as much as one-sixth in two years. We see that the New York Central itself during the years of stagnation in business from 1874 to 1877 inclusive made some gain in freight traffic in every year but one. From 1869 until 1883, indeed, there was a decrease in only one year—1877—and that was but 54 millions of ton-miles (¾ per cent.). Now we have a decrease of 252 millions (9½ per cent.) from 1881 to 1882 followed by another decrease of 194 millions (8 per cent.) from 1882 to 1883. This is sufficient evidence that a trunk-line traffic is vulnerable like any other, and that there is no such miraculous growth of it that it can support new-comers without affecting the old lines. Though not years of very profitable business, the last two years of this company were in a time of great industrial activity and production. The country from which the New York Central draws traffic probably shipped as much freight during these two years as in almost any other two; notwithstanding which we find this great decrease in traffic.

The earnings make a very different showing, due to a fact rarer even than a decrease in freight traffic, namely, a considerable increase in the average rates. These earnings compare as follows with those of the previous year:

	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passenger.....	\$8,526,843	\$7,816,519	+\$710,324	9.1
Freight.....	20,142,433	17,672,252	+2,470,181	14.0
Other.....	5,101,446	5,140,010	-38,564	0.8
Total.....	\$33,770,722	\$30,628,781	+\$3,141,941	10.2

What is remarkable here is that the large gain in passenger earnings, and the great one in freight earnings, were made in spite of a slight decrease in passenger traffic and a large decrease in freight traffic. That is, as we have said above, the increase in earnings was wholly due to higher rates. Higher rates were certainly to be expected after a year of railroad war, but the increase brings the average freight rate above that of any previous year since 1877, and makes it 24 per cent. more than in 1882. We do not remember ever to have chronicled so great an increase in an average freight rate before.

It is, however, explainable. There has doubtless been no increase in the rates on different classes of local freights, and the higher average rate is probably largely due to the fact that the road carried a larger proportion of through high-class freight. Without any change in the rates charged there may be a great change in average rates received. Should a road this year carry 100,000 tons of first-class through freight at 75 cents per 100 lbs., and 400,000 of lower classes, at an average of 30 cents, its average rate will be 39 cents per 100 lbs. If the next year half of the lower class freight should be diverted from it, so that it should carry 100,000 of first-class at 75 and 300,000 of lower classes at 30, its average rate

on the through traffic would be 45 cents per 100. Now, there has been something like this affecting the New York Central traffic during the past year. The new Lackawanna road has carried fourth-class freight chiefly and low-class freight almost entirely. The diversion of east-bound freight in the summer was exclusively of the two lower classes and chiefly of the lowest; the larger canal shipments were almost exclusively goods paying the lowest rates. Thus the diversion of traffic which reduced the New York Central's tonnage mileage last year was of that freight which pays least, leaving it probably about as much as ever before of the best paying freight. This has worked together with the general maintenance of through rates to make the New York Central's average freight rate greater than for several years before. It has carried eastward a smaller amount of grain and flour than usual, and has carried westward a smaller amount of sugar and other low-class freight.

Now this is important, not only as showing what has caused this great increase in the average rate, but also as indicating that the business which has been diverted from it is the unprofitable traffic—at least that which affords the smallest margin of profit. And we believe that this is a fact of general application: the business which pays the highest rates is the hardest to divert. Probably quality of service, promptness and certainty of delivery, convenience of places of receipt and delivery, etc., have more effect on this traffic than ordinary differences in rates.

The average receipt, expense and profit per unit of traffic on this road for eight successive years have been:

	Per ton-mile.			Per pass.-mile.		
	Receipt.	Cost.	Profit.	Receipt.	Expense.	Profit.
1875-76.....	1.05	0.71	0.34	1.91	1.09	0.82
1876-77.....	1.01	0.70	0.31	2.07	1.14	0.93
1877-78.....	0.914	0.590	0.324	2.01	1.28	0.73
1878-79.....	0.796	0.541	0.255	2.05	1.19	0.86
1879-80.....	0.879	0.541	0.338	1.968	1.266	0.702
1880-81.....	0.783	0.593	0.220	1.862	1.218	0.644
1881-82.....	0.738	0.600	0.138	1.808	1.156	0.652
1882-83.....	0.915	0.680	0.235	1.983	1.303	0.680

The cost per ton per mile is the largest since 1877, and per passenger mile it is larger than in any other year reported. Thus the profit per ton per mile, though 70 per cent. more than in 1882, was very little more than in 1881 and less than in any previous year, and the profit per passenger mile was less than in any previous year. The expense per passenger mile is increased in all years, however, and the profit diminished by charging all the expenses of passenger trains to passenger traffic and none to mails and express.

This increase in expenses makes the increase in rates so much the more important. If the rates had been no higher than in 1881-82 the net earnings from passengers would have been \$752,500 and the net earnings from freight \$2,134,800 less than they actually were, and the profits per share of stock would have been but \$4.06, instead of \$8.19. A railroad war last year evidently would have been very unhealthy for the New York Central.

The total working expenses increased \$1,354,620, or 7 per cent., though there was a falling off of about 6 per cent. in traffic; but this is partly accounted for by the increase in train mileage, amounting to about 8 per cent. The average passenger train-load fell from 79 to 74 persons, and the average freight train-load from 219½ to 199½ tons. The passenger train-load is still much larger than that of most other roads; but the freight train-load is exceeded on many others. The decrease in these average loads last year was probably due to the smaller proportion of through traffic.

For twelve successive years the passenger, freight and total earnings and the net earnings of this road have been:

	Earnings.			
Year.	Passenger.	Freight.	Total.	Net.
1871-72.....	\$7,772,202	\$17,553,738	\$25,325,940	\$10,271,381
1872-73.....	8,147,672	20,947,168	29,094,840	12,925,974
1873-74.....	7,487,357	20,348,725	27,836,082	13,262,089
1874-75.....	7,276,848	17,899,791	25,176,639	11,765,110
1875-76.....	6,762,967	17,593,265	24,356,232	11,922,416
1876-77.....	6,576,810	16,424,317	23,001,127	11,632,924
1877-78.....	6,022,955	19,045,840	25,068,795	12,774,578
1878-79.....	5,953,102	18,270,250	24,223,352	12,373,511
1879-80.....	6,611,159	22,169,906	28,781,065	15,326,019
1880-81.....	6,958,038	20,736,750	27,694,788	12,883,810
1881-82.....	7,816,519	17,672,252	25,488,771	11,232,807
1882-83.....	8,526,843	20,142,433	28,669,276	13,020,728

The passenger earnings, as we have said, were larger last year than ever before; the freight earnings, though no less than \$2,470,000 more than the previous year, were \$594,000 less than in 1881 and \$2,057,000 less than in 1880, and also less than in 1873 and 1874. The gross earnings, nevertheless, were larger than ever before, exceeding those of 1880, hitherto the largest, by \$595,000. In that year the passenger earnings were less than 33½ per cent. of the freight earnings; this year they are 45½ per cent. of them. Apparently there has been no diversion of the passenger traffic, and it is become of relatively greater importance than ever before.

The net earnings were 16 per cent. more than in 1882 and 1 per cent. more than in 1881, but \$2,306,000

(15 per cent.) less than in 1880. The fixed charges were a little larger this year, so that it requires larger net earnings to yield the same dividend. The addition to the funded debt last year was \$1,524,200, the year before it was \$5,000,000. It requires \$891,452 per year to pay the interest on these additions. In each of the years 1880 and 1881 there was an increase of \$2,000,000, but there had been none for a long time before that.

The working expenses last year were much larger than ever before. For eight successive years they have been:

Year.	Expenses.	Year.	Expenses.
1875-76.....	\$16,171,172	1879-80.....	\$17,861,535
1876-77.....	14,946,162	1880-81.....	19,679,465
1877-78.....	16,135,977	1881-82.....	19,395,974
1878-79.....	16,123,073	1882-83.....	20,750,594

It is the increase in these which makes the great decrease in net earnings since 1880. That year was such a favorable one to the railroads as is likely to come only when, after a long season of dull business, there is a sudden and great revival. The large traffic increases earnings, and the pressure of business puts up the rates, and this when the elements of expenses have only begun to rise. A little later wages and materials are so high as to greatly increase expenses, and the competition of lines improved to carry a heavier traffic is likely to put down rates, while a little later new competitors actually reduce traffic. This is likely to be the course of all kinds of business in which there is free competition, and the railroads do not escape. In the case of the New York Central last year the circumstances permitting an increase in the average rates alone prevented a serious decrease in its profits.

The diversion of traffic from this road which is seen in the course of last year's traffic is likely to continue this year. The Erie is not likely to take so large a proportion of the east-bound traffic for the whole of this year as it did in the last three months of the last (fiscal) year; but it may take a larger proportion than in the whole of last year. The Lackawanna, which took a considerable share of the west-bound through freight from New York during part of last year, will have a share for the whole of this year. Last year it carried scarcely any through passengers and very little east-bound freight. It cannot be expected that it will forever go without this kind of business. The West Shore, which was felt last year only as a competitor for less than three months for Saratoga travel and the local travel between New York and Albany, this year will compete for through and local freight and passengers over the whole distance from New York to Buffalo. It is not probable that it will be thoroughly prepared to meet the Central on equal terms for all this traffic within this year, however. We see that the Lackawanna has been open to Buffalo a year, and has not made much impression on any through traffic except west-bound freight, and the West Shore will not have a fully developed traffic during this fiscal year—but it will get something. It will compete for local traffic the entire length of the New York Central as has never been done before, and nearly all the local traffic it gets will be taken either from the Central or the canal. It may be felt much more in 1884-85, however, than this year. Now all the traffic so taken must be carried at very low rates, yielding an extremely small profit, and with a comparatively small traffic it will be extremely difficult to make the expenses per unit of traffic as low as on such roads as the New York Central and the Erie, with their very heavy traffic; but while this may be a reason why the new road will make very small profits at first it will nevertheless reduce the traffic and earnings, and especially the profits, of the old trunk lines, and of the New York Central chiefly. It, therefore, seems probable that its profits for the current year will be less than last year, and that there will be a further decrease in 1884-85, unless meanwhile there is a great increase in the total traffic. An increase in traffic during the current year (ending with September next) is not to be looked for. The last harvest was such that we must expect a decrease in the east-bound movement; and the condition of manufacturing business and other industries is such that a west-bound and local traffic as large as last year will be as much as we can expect. Under these circumstances the New York Central, being one of four railroads between New York and Buffalo, it will certainly be very remarkable if it is able to make as great profits as when it is one of two. Still the amount of traffic which the new West Shore road will be able to take from it this year will probably be much less than most people suppose. It will be felt chiefly, probably, in local travel; and it does not seem probable that the competition between the two will go so far as to reduce rates to any great extent. Rates are already so low that they cannot be much reduced and leave any profit; and neither company will be willing to work without it.

THE CAR WHEEL OF THE FUTURE.

From a report of a meeting of the New England Railroad Club held in Boston, Dec. 12, which is published on another page, it will be seen that the subject for discussion at a meeting to be held in January is "The Wheel of the Future." This indicates that those who conduct these meetings are not satisfied with the wheels of the present. Although this may be so, it will not be very safe for any one to attempt to exercise the gift of prophecy regarding car wheels, because, as some one has said, prophecy is very risky when you are not dead sure, and probably, on the much vexed question of wheels, few disinterested men are bold enough to say that they are quite certain of the data and the theories on which their opinions regarding car wheels are based, if they have any such opinions which are at all definite.

The truth is, though, that the reason why the car-builders of Boston propose to exercise their prevision, to discern the wheel of the future, is because many of the wheels of the present are so extremely unsatisfactory. Exact data concerning the performance and defects of car wheels are not easily obtainable, especially by one who is likely to give them to the public through a newspaper. The failures in most roads are so many that the officers will not allow the statistics to be published, if any exist. Probably the majority of railroad managers act on the assumption that ignorance, regarding the breakage of their wheels, is bliss, and therefore keep no account of their failure. There is very good reason for thinking, though, that if the railroad companies here were required to report all broken wheels, and if such reports were made public, the figures would be very startling. During the past few years competition has reduced the price of cast-iron wheels to very low figures. The result has been that a great many very poor wheels have been made, and, as a consequence, the number of breakages has been enormously great. The fact that when such fractures occur on passenger trains public indignation is aroused, and the liability to pecuniary damages, have led railroad managers and car-builders to seek a remedy. This has resulted each year in the use of more steel-tired wheels under passenger cars, and the abandonment of chilled cast-iron wheels for that service. Unless some process can be discovered which will improve the quality of cast-iron wheels, their use will probably be almost entirely abandoned in passenger service.

The question then which railroad managers, master car-builders, and those who proposed the subject for discussion at the next meeting of the New England Railroad Club must answer is, What form of steel-tired wheels would it be best to adopt. It is not at all probable that the Boston car-builders will try to evolve a car wheel out of their inner consciousness. That has been attempted by a number of New England inventors, but the results have not been very successful. The other alternative is to consult past experience, and learn what answer it can give to the question.

The only materials used for the treads and flanges of wheels are chilled cast iron and rolled steel tires. If the use of the cast iron is abandoned, then we are compelled to fall back upon steel tires. In this country the only steel-tired car wheel that has come into extensive use is the Allen paper wheel. For locomotive driving-wheels cast-iron centres have been successfully used for a great many years. Owing to their great size, and the heavy loads they carry, and to the fact that they must transmit the power for propelling the locomotive, the service which they must perform and the strains to which they are subjected are much more severe than those which car wheels must resist. Yet neither the New England Railroad Club nor any other similar organization that we know of has propounded or is considering the question of what the driving-wheel of the future will be. Master mechanics seem to be quite well satisfied with the driving-wheels we are now using.

If we go to European experience we find that wrought-iron driving-wheel centres are universally used and are giving, apparently, entire satisfaction. We also find that two kinds of wheel centres are in general use there, one consisting of spokes made of wrought iron and the other the Mansell wooden wheel, the central portion of which is made of wood. If we consult European experience still further we find that the breakage of steel tires is frequent and that some of the most serious accidents that have occurred there have been due to this cause. The result has been that a great deal of attention has been given to appliances to prevent accidents in case tires break. A great variety of such devices have been proposed and are in use.

The conclusion which has been reached, and which experience has taught, is that no steel tire is safe for passenger service unless it is secured to the wheel

centre so that there would be no danger in case the tire was broken on opposite sides of the wheel so as to be entirely separated into two or more parts. The means of fastening tires has often been tested by cutting tires in two, and then putting them on wheels and into service. In this country the most common fastening used is a flange rolled on the inside of the tire, which is bolted in some way to the wheel centre. This is the method employed on the Allen paper wheel. It undoubtedly adds to the cost of the tires, but whether, on the whole, it is more expensive than Mansell's retaining rings, which, perhaps, are most generally approved in Europe, we are not now able to say.

The general use of continuous brakes has also compelled those who have the care of cars to provide means of holding the tires on the wheels, so that they will not be liable to turn on the centres when the brakes are applied. The tires of the Allen and some other wheels are bolted to the wheel centres through the internal flange, so that the tire cannot turn without shearing off the bolts. The other plan is either to shrink the tire on the centre or to force the centre into the tire by hydraulic pressure. Tires are sometimes keyed fast, although that method of holding them has not come into general use.

Quite recently we have learned that on one of the prominent English railroads the use of the Mansell wheels with wooden centres has been abandoned, owing to the difficulty of holding the tires so they would not turn. It was impossible to shrink them on at a high heat, because they would then burn the wood, and owing to the shrinkage of the wood, and to other causes, it was found that forcing the centres into the tires by hydraulic pressure was not reliable, or rather that tires would get loose when that method was employed. On the line referred to wrought-iron spoke centres were adopted in place of the Mansell wheels.

Another theory that is discussed a good deal in connection with car wheels is that of the elasticity and the inelasticity of the wheel centres. It is said of certain materials—wood for example—"that it absorbs the vibrations," or that "it deadens the blows." On the other hand it is said of some wheels that "they are sufficiently elastic to prevent crystallization of the axle, and, in a great degree, injury to the track." One of the speakers at the last Master Car-Builders Convention, who is also a manufacturer of wheels, claimed for those he made the special merit of being elastic.

Now, it is not easy to get at exactly what people mean by "deadening the blows" or "absorbing the vibrations." Probably if they were asked whether a mass of soft putty would absorb the blow of an ivory billiard-ball allowed to fall from a height of ten feet they would say that it would, and that a marble slab would not. Lead and india-rubber would probably be regarded as absorbents of blows, whereas cast-iron and ice would not be. It will be seen from these illustrations that it is not a matter of elasticity at all, but only of softness. That is, soft substances are regarded as absorbents of vibration, and hard ones are not. Now it so happens that softness prevents the use of any material in the construction of a car wheel, and when any such material like paper or wood is used it is first deprived of its softness by subjecting it to hydraulic pressure, which, to the extent that it hardens the material, makes it, according to this theory, a non-conductor of vibrations.

If we take up the theory of elasticity, we are equally at sea. Cast-iron within narrow limitations is more elastic than wrought iron, yet it has never been said that steel tires wear longer on cast-iron centres than on wrought-iron centres. Wood, as used in car wheels, where the weight is carried endwise to the grain, is comparatively inelastic, especially after it is subjected to hydraulic pressure, yet no one has said that tires on such wheels do not last as long as they do on cast-iron centres. Probably what many people mean when they say that a given material "deadens the blows," is that it has no resiliency; that is, it does not rebound or give back the blow. or, in other words, is not elastic. Therefore, according to this view, an elastic wheel would not "absorb the vibrations," and one which did would not be elastic. It is hard to reconcile the two theories unless one part of the wheel is made to fulfill the elastic theory, and another part is made a non-conductor of vibrations.

It may be said that a wheel made of an absolute unyielding material would shiver itself to pieces. Perhaps it would, but inasmuch as no such materials exist we need not bother ourselves about what would happen if they did. It would simplify the wheel question immensely if people who consider it could only be induced to throw overboard the formula of words about deadening the blows and the need of

elasticity. These theories have led to many delusions, and there is no satisfactory experimental proof in existence, known to the writer, to indicate that either the one quality or the other is needed in a car wheel.

The requisites which the wheel of the future must possess may be briefly summed up as follows:

1. It must be reasonably safe against breakage. No wheel is or can be entirely so.

2. If it has a tire, it must be secured to the wheel so that the tire if broken into two halves, could still be run safely.

3. The tire must be prevented from turning by the action of the brakes in case it should be heated by them.

No wheel which does not fulfill these conditions is at all likely to be the wheel of the future. Of course, of two or more kinds of wheels, which fulfill these conditions, that which will perform a given amount of service at the lowest cost will be preferred.

November Earnings.

We have so far reports of earnings in November from 69 different railroads, whose mileage, aggregate earnings and average earnings per mile were as follows this year and last:

	1883.	1882.	Inc. or Dec.	P. c.
Miles.....	52,844	48,083	4,761	10.0
Earnings.....	\$27,729,208	\$25,507,570	\$2,057,638	8.0
Earnings per mile.....	525	532	7	1.3

With an increase of 10 per cent. in miles worked the roads have made an increase of 8 per cent. in earnings, and the earnings per mile have fallen only from \$532 to \$525. In October they made a slight increase in earnings per mile.

The four roads northwest of St. Paul compare as follows with last year:

	1883.	1882.	Inc. or Dec.	P. c.
Miles.....	5,806	3,681	2,125	60.0
Earnings.....	\$2,097,638	\$2,080,927	\$16,711	29.7
Earn. per mile.....	400	568	168	19.0

All gain in total earnings except the Manitoba. In spite of the immense increase in mileage of the Northern Pacific and the Canadian Pacific, the earnings of the former fell only from \$530 to \$516, and of the latter from \$290 to \$253. The decrease of 19 per cent. in the average earnings per mile of the group was due chiefly to the falling-off on the Manitoba notwithstanding its large increase in mileage, causing earnings per mile to decrease from \$863 to \$625. All the roads earned less than in October, as was to be expected.

The other roads west and northwest of Chicago, as far south and east as Chicago & Alton's lines to St. Louis and Kansas City and as far west as the Missouri, of which ten have reported, make the following showing in the aggregate:

	1883.	1882.	Increase.	P. c.
Miles.....	12,669	11,700	969	8.3
Earnings.....	\$6,888,140	\$6,131,284	\$756,856	12.3
Earnings per mile.....	543	524	19	3.6

The small increase in earnings per mile is satisfactory in view of the large new mileage. Considerable gains in earnings per mile are made by the Milwaukee & St. Paul, the Iowa lines of the Illinois Central and the Milwaukee, Lake Shore & Western.

All these roads made gains in October also, but the more important ones made a much larger gain in November.

Of the Far Western roads only the Central Pacific and the Denver & Rio Grande have reported as yet, the former having a decrease of \$39,000, instead of an increase of \$78,000 in October; the latter, with the addition of the Utah line, making 29 per cent. more money from 43 per cent. more road.

Eleven roads west and southwest of St. Louis report (counting the Missouri Pacific system as six) as follows:

	1883.	1882.	Inc. or Dec.	P. c.
Miles.....	7,729	7,224	505	7.0
Earnings.....	\$4,397,615	\$4,227,648	\$169,967	4.0
Earnings per mile.....	569	585	16	2.7

Four of the roads reporting have a decrease in earnings—the Gulf, Colorado & Santa Fe, the Little Rock & Fort Smith, the Missouri Pacific and the Texas & Pacific. But in the Missouri Pacific group, the Iron Mountain's earnings, which probably have decreased, are given with the Missouri Pacific's, which ought not to have decreased, as the Kansas and Missouri traffic seems to be very good—witness a gain of 24 per cent. on the Central Branch and of 20 per cent. on the St. Louis & San Francisco, which latter has not usually done well recently. The indications are that traffic is lighter than last year in Arkansas and Texas, but very good in Missouri and Kansas, except so far as the through traffic of the Missouri roads is affected by the falling-off in Texas business. Compared with October we find that the Gulf Colorado & Santa Fe made an increase of \$35,930 then, while it has a decrease of \$7,672 in November; the Little Rock & Fort Smith's decrease of \$1,828 in October becomes \$21,852 in November; the Missouri Pacific system as a whole gained \$111,509

(3.2 per cent.) in November, against \$805,997 (8.8 per cent.) in October. The effect of the bad Southern crops becomes more pronounced as the season advances. So far about as much cotton has been shipped as last year, which leaves the whole decrease to fall on the following nine months of the cotton year; the decrease in other traffic consequent on a poor cotton crop probably began two or three months ago, as soon as it was known that the crop would be light.

We now turn to the group of roads north of the Ohio River, where are lines which serve as an eastern outlet to the four groups hitherto discussed, though those that report have for the most part but a small amount of such business. We have reports from 19 of these, making the following aggregates:

	1883.	1882.	Inc. or Dec.	P. c.
Miles.....	9,150	8,980	170	1.9
Earnings.....	\$4,241,563	\$4,237,019	4,544	0.1
Earnings per mile.....	463	471	8	1.7

In the aggregate the changes are inconsiderable, but 12 of the 19 roads have a decrease in total earnings, and the considerable increases are very few—14 per cent. by the Chicago & Grand Trunk, 14 by the Flint & Pere Marquette and 13 by the Peoria, Decatur & Evansville. The gain of 2 per cent. by the Wabash was more likely to be made by its lines west of the Mississippi than by those properly belonging to this group, which as far as possible is confined to roads west of Pennsylvania and east of the Mississippi. In this group 18 roads that reported in October made a gain of \$191,708 then, and a gain of \$7,377 in November. Some of the gains and losses in October and November were:

	October.	November.
Chicago & Eastern Ill.....	Loss, \$31,347	Loss, \$18,529
Chicago & Grand Trunk.....	Gain, 45,102	Gain, 32,387
Chic., Ind., St. L. & Chic.....	Gain, 5,850	Loss, 10,028
Cin., Wash. & Baltimore.....	Loss, 4,044	Loss, 12,708
Det., Lansing & North.....	Gain, 20,209	Loss, 8,602
Flint & Pere Marquette.....	Gain, 58,713	Gain, 31,175
Ill. lines of Ill. Cen.....	Gain, 24,865	Gain, 26,071
Ind. Bloom. & West.....	Gain, 1,894	Loss, 21,023
Ohio Central.....	Gain, 3,928	Loss, 7,852
Belleville Line.....	Loss, 11,052	Gain, 487
Wabash.....	Gain, 117,151	Gain, 34,405

The only noticeable favorable change from October to November is in the case of the Chicago & Eastern Illinois, and the Belleville Line of the Alton & Terre Haute, where a loss of 12 per cent. is transferred into a trifling gain.

The railroads south of the Ohio and the Potomac and east of the Mississippi will next engage our attention. The aggregate mileage and earnings of the 19 roads that report were:

	1883.	1882.	Increase.	P. c.
Miles.....	9,108	8,733	375	4.3
Earnings.....	\$4,513,352	\$4,252,648	\$260,704	6.1
Earnings per mile.....	494	488	6	1.3

These roads make a favorable showing in the aggregate, which they have been doing for a year past, but it is less favorable than heretofore. In October the group had an increase of 12 per cent. in aggregate earnings and 7½ per cent. in earnings per mile. The lighter crops are probably beginning to have their effect here also, as in the Southwest. Five of the 19 roads reporting have a decrease in total earnings, only two of which had a decrease in October, and most of those that gain have gained less than in October, the Louisville & Nashville \$74,008 in November, against \$261,868 in October, the Southern Division of the Illinois Central \$14,931 against \$63,141, the Alabama Great Southern \$9,243 against \$23,433, etc. The only important exception is the Chesapeake & Ohio, which gained \$11,457 in October and \$34,530 in November.

Altogether, the indications are not favorable for a continuance of the large gains that the Southern roads have been making for a year past; but, as for a year they have done extraordinarily well—as a whole, much better than ever before—they may make satisfactory returns, even if they earn a little less than last year.

Only four Eastern roads have reported as yet—not enough to indicate the course of traffic east of Ohio and Michigan, especially as three-fourths of the mileage is in Canada. But all four of the roads show gains, and but one has any increase of mileage worth mentioning. That one, the Rochester & Pittsburgh, earned \$290 per mile this year and \$250 last, but not enough in either to make it of the slightest importance as an indication of the course of traffic, and about the same as in October. The Grand Trunk is the only trunk line reporting. It gains 1.6 per cent.—very little, but a gain over a time that was generally very favorable to the trunk lines; its gain was \$52,547 in October and \$24,361 in November, but a change like this on so great a road is a trifle. The Long Island and the Eastern gained more in November than in October.

Earnings and Expenses of Four Trunk Lines.

The publication of the New York Central report enables us now to give the earnings and expenses of the four trunk lines for the year ending with Septem-

ber last and to compare them with those of the previous year, as follows:

	1882-83.	1881-82.	Increase.	P. c.
New York Cen.:				
Gross earnings.....	\$33,770,722	\$30,628,781	\$3,141,941	10.3
Expenses.....	20,750,594	19,395,974	1,354,620	6.9
Net earnings.....	\$13,020,128	\$11,232,807	\$1,787,321	15.9
* Erie:				
Gross earnings.....	\$23,843,368	\$22,455,564	\$1,387,804	6.2
Expenses.....	15,444,583	14,630,218	814,365	5.6
Net earnings.....	\$8,398,785	\$7,825,346	\$573,439	7.3
Pennsylvania:				
Gross earnings.....	\$51,085,029	\$47,132,793	\$3,952,236	8.4
Expenses.....	32,080,493	29,509,660	2,570,833	8.7
Net earnings.....	\$19,004,536	\$17,623,133	\$1,381,403	7.8
Baltimore & Ohio:				
Gross earnings.....	\$19,739,837	\$18,383,876	\$1,355,961	7.4
Expenses.....	11,034,014	10,929,214	104,800	1.0
Net earnings.....	\$8,705,823	\$7,454,662	\$1,251,161	16.8
The four roads:				
Gross earnings.....	\$128,438,956	\$118,601,014	\$9,837,942	8.3
Expenses.....	79,309,684	74,405,006	4,904,678	6.5
Net earnings.....	\$49,129,272	\$44,195,948	\$4,933,324	11.3

* Including New York, Pennsylvania & Ohio for five months in both years.

The changes on the New York Central are not far from the average changes. Its percentage of gain in gross earnings is greater than that of any other road; its percentage of increase in expenses greater than of any but the Pennsylvania; its increase in net earnings greater than that of any but the Baltimore & Ohio. It, we have shown elsewhere, made its whole gain in gross and net earnings by getting better rates. We are not yet able to find how much this affected the profits of the other roads, as they have not reported the amount of their traffic for the last year and only one of them will do so, as the Pennsylvania reports it for the calendar year and the Baltimore & Ohio does not report it at all. We suppose, however, that the New York Central is the only one of the four that has suffered any decrease in freight traffic, and that the others have had a considerable increase in this traffic. Of the course of passenger traffic we have little means of judging.

Below is given a statement of the gross earnings of each of these roads for seven successive years:

	N. Y. Central.	* Erie.	Balt. & Ohio.	Penna.
1876-77.....	\$26,578,086	\$16,468,984	\$13,208,860	\$32,558,483
1877-78.....	28,910,555	17,236,322	13,765,290	31,830,808
1878-79.....	28,806,584	17,789,364	14,193,981	34,333,030
1879-80.....	33,175,913	20,817,037	18,317,740	40,357,682
1880-81.....	32,348,397	22,987,887	18,463,877	43,884,701
1881-82.....	30,628,781	22,455,564	18,383,876	47,132,793
1882-83.....	33,770,722	23,843,368	19,739,837	51,085,029

* Including the New York, Pennsylvania & Ohio earnings for the five months from May to September in all the years.

There has been comparatively little change in mileage on these roads, and the additions (of which there has been none to the New York Central) cannot have added much to their earnings. The gain, it will be seen, has been much less in proportion on the New York Central than on any of the others. From 1878 to 1883 its increase was \$4,860,167 (17 per cent.), the Erie's was \$6,577,046 (38 per cent.), the Pennsylvania's \$19,154,221 (60 per cent.), and the Baltimore & Ohio's \$5,973,357 (43 per cent.). Of the total increase of \$36,565,000 in these five years the Pennsylvania had 52.4 per cent., the Erie 18, the Baltimore & Ohio 16.3, and the New York Central 13.3 per cent.

The growth of the coal and iron business has probably had more effect on the exceptional increase of the more southern lines than any other one thing; but the Erie's increase has been very largely due to its transformation from a dilapidated, bankrupt road into a thoroughly efficient condition.

Heavy Grain Movement in the West and Light Seaboard Receipts.

The Northwestern grain receipts became very large again in the first week of December, when they were very much greater than in the corresponding week of any previous year. The shipments are but little larger than in previous years, and it is a question what will be done with the grain. It will be remarkable if it is held until navigation opens in the spring, and if not there must soon be large shipments by rail to the East, or a great falling-off in receipts. In this first week of December the receipts of the Northwestern markets exceeded their shipments by 4,132,000 bushels.

For the six weeks ending Dec. 8 the receipts and shipments of the Northwestern markets and the receipts at Atlantic ports for eight successive years have been:

Year.	Northwestern Receipts.	Shipments.	Atlantic receipts.
1876.....	18,539,090	17,301,024	21,145,912
1877.....	21,720,170	16,546,032	28,942,634
1878.....	23,168,672	19,258,762	30,575,088
1879.....	27,795,015	19,116,525	35,408,391
1880.....	33,310,046	20,348,307	35,492,079
1881.....	20,254,090	16,275,808	20,671,415
1882.....	31,382,377	19,878,750	24,541,394
1883.....	38,103,714	24,270,451	20,503,722

The shipments have usually been much less than the receipts in these weeks just before the close of navigation, but in 1879, when the excess of receipts was 8½ millions, in 1880, when it was 13 millions, and in 1882, when it was 11½ millions, there had been exceptionally large crops of small grain in the preceding harvest; this year the receipts are much larger than ever before and exceed the shipments by 14 millions, though the last wheat harvest was exceptionally light.

But this is the time when Atlantic receipts should be

exceptionally large. Now, though the Northwestern receipts are 6,700,000 bushels more this year than last and the Northwestern shipments 4,400,000 greater, the Atlantic receipts are 4,000,000 less and smaller than in any other year of the eight. The Atlantic receipts at this time have always heretofore exceeded the shipments of the Northwestern markets, but this year they are 3,767,000 bushels less. There seems to have been an extraordinary absorption of grain at interior points. For in spite of the fact that the Northwestern markets have shipped more than ever before this year the Atlantic ports have received less than in any year since 1877 at least.

It should be said, however, that these figures do not include the whole grain movement. The shipments at interior stations, which go through to the East without passing through any reporting Northwestern market we get no trace of, except so far as they may go to make up Atlantic receipts, and such of them as go to interior Eastern points for consumption we get no trace of at all. The total amount of grain marketed in the West may not have been greater when the receipts of the Northwestern markets have increased, because the shipments from the non-reporting stations may have fallen off. This would be perhaps improbable if there were a reporting market in every important grain exporting district. But there is none south of the lakes and east of Peoria and St. Louis, which is the chief winter-wheat producing portion of the United States, a very large proportion of whose shipments goes by routes south of any reporting market. When there is a great wheat crop in this district, as in 1877, 1878, 1879, 1880 and 1882, or a great surplus of corn, as in all these years except 1882, it is likely to contribute greatly to the Atlantic receipts; when the crops are short there it adds comparatively little to them—the less because these states always consume a very large proportion of their own crop. Ohio, for instance, probably consumes about 15,000,000 bushels of wheat a year; so that when its crops was 50 millions, as in 1880, it could spare 35 millions, or four times as much as this year, when its crop is but about 24 millions. The fact that the country where the crop of wheat is very poor this year (and of corn not much better) is chiefly in the district which is able to market its grain so as to escape reporting, makes it probable that the total amount of grain marketed from Western farms has not increased in proportion to the increase in receipts at the eight reporting Northwestern markets (all lake ports except Peoria and St. Louis), and it is possible that they have not increased at all, or even that there has been a decrease.

This too may serve to explain why the shipments of the Northwestern markets have been so much larger than last year and larger than the Atlantic receipts. The interior Eastern towns may receive a large part of their supply from the Ohio valley by the routes whose shipments escape reporting in those years when there is a large surplus in that valley; while when this surplus is small they must be supplied from the country further west and north—by way of the reporting markets. This year there are good crops of small grains behind all of the important reporting markets—west of Peoria and St. Louis, in Iowa, Nebraska, Missouri and Kansas, west, southwest and northwest of Chicago, in the same states and further north, and west of Milwaukee and Duluth. Toledo, Cleveland and Detroit probably receive more from the country where the wheat crop is light east of the Mississippi, than from that where it is large, further west, and scarcely any from the country west of Lake Michigan, though the Wabash must bring two of them a great deal of grain from Kansas and Missouri. But these places have received but one-sixth of the whole Northwestern receipts since July this year, and in the six weeks under consideration less than one-eighth of the whole.

We conclude, therefore, that the unusually great difference between the reported Northwestern receipts and shipments and the Atlantic receipts is due largely, and perhaps chiefly, to smaller shipments from the country south of the lakes and east of the Mississippi. This country (the four states, Ohio, Michigan, Indiana and Illinois) produced about 173 million bushels of wheat last year and only 98 millions this year, and its wheat shipments, therefore, have probably fallen off very largely, as it must consume about 50 millions a year, so that its surplus of the crop available for shipment would be 123 millions last year and but 48 millions this year. On the other hand, it had scarcely any corn to ship until December last year, and a great deal more this year. That the larger shipments of corn have not counterbalanced the smaller shipments of wheat seems probable, however, from what has been shown above.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Atchison, Topeka & Santa Fe.—The track on the *Wichita & Western Branch* is laid from Wichita, Kan., west to Goddard, 15 miles.

Bangor & Piscataquis.—Extended from Blanchard, Me., northwest 3½ miles.

Bellaire, Zanesville & Cincinnati.—Track laid from Caldwell, O., westward 15 miles. Gauge, 3 ft.

Detroit, Mackinac & Marquette.—Track laid from Ishpeming, Mich., west to Winthrop Mine, 3 miles.

Oregon & California.—Extended southward to Grant's Pass, Ore., 4 miles.

Wisconsin Central.—This company's *Wisconsin & Minnesota* line is extended from Chippewa Falls, Wis., to Eau Claire, 10 miles.

This is a total of 150½ miles of new railroad, making 5,997 miles thus far this year. The total new track reported in

our columns to the corresponding date for 12 years past has been as follows:

	Miles.		Miles.
1883.....	5,997	1877.....	2,919
1882.....	9,799	1876.....	2,278
1881.....	7,808	1875.....	1,333
1880.....	5,997	1874.....	1,844
1879.....	3,643	1873.....	3,630
1878.....	2,263	1872.....	7,160

The statements include *main track only*, no account being taken of second tracks or other additional tracks or sidings.

NOVEMBER GRAIN EXPORTS were a little (5 per cent., greater this year than last, when the exports were small). The corn exports were more than four times as great as last year, but the wheat and flour exports were 15 per cent. less. There is a decrease in the value of the breadstuffs of 4 per cent., or nearly the same as the increase in amount. In both these years the exports were smaller than for several years previous, as will be shown by the following statement of flour, wheat and corn exports for eight successive years.

Year.	Flour, bbls.	Wheat, bu.	Corn, bu.	Total.
1876.....	347,397	4,924,905	3,463,652	9,953,833
1877.....	322,721	6,955,091	6,331,386	13,738,721
1878.....	566,612	11,671,578	3,459,454	17,680,786
1879.....	583,906	10,702,900	4,748,001	18,078,478
1880.....	707,479	12,209,221	7,923,908	33,316,782
1881.....	501,955	10,180,700	4,191,280	16,630,796
1882.....	832,831	8,825,845	3,634,169	13,342,773
1883.....	919,487	6,764,897	2,815,041	13,717,509

The flour exports are larger this year than heretofore, but the wheat exports are the smallest since 1876, and so, with the exception of last year, are the corn exports. Altogether the exports are less this year than in any other since 1876 except last year.

For the five months from July to November, inclusive, the value of the breadstuffs exports was more than \$26,000,000 (26 per cent.) less this year than last. There was an increase of \$11,500,000 in the corn, but a decrease of \$37,000,000 in the wheat and flour. Very nearly 50 per cent. of all the wheat exported went from the Pacific coast last November, while 27.4 per cent. went from New York and 13 per cent. from Baltimore. But 39 per cent. of the flour went from New York and 14½ per cent. from Boston, while 24½ per cent. went from the Pacific coast. New Orleans exported more corn than any other place except New York, yet only 16 per cent. of the whole, and of the total value of breadstuffs exported for the five months since June only about 3 per cent. has gone from New Orleans, while last year in the same time it had 5½ per cent. of the exports. In the first half of this year, however, 6.8 per cent. of the exports were from New Orleans.

It is noticeable that this year in November the value per bushel of the wheat exported has been nearly as great at San Francisco as at Atlantic ports, the average being \$1.07 at San Francisco, against 97 cents at Boston, \$1.09 at Baltimore, \$1.10 at Philadelphia, \$1.11 at New York, and \$1.11 at New Orleans. This is doubtless caused largely by the extremely low freight rates from San Francisco to Liverpool, which have gone as low, we believe, as 18 cents per bushel, though it may be helped by the fact that the light demand for wheat and the necessity of storing an unusually large part of the receipts make the four months' voyage from San Francisco an advantage to the shipper, wheat for April delivery being worth more than wheat for December delivery. As it seems that the value of wheat can be increased only about our cents a bushel by carrying it from San Francisco to New Orleans it is evident that nothing is to be made by sending wheat over the Southern Pacific Railroad, 2,200 to 2,500 miles.

Last year at this time the average value of wheat exported was \$1.11 at New York and \$1.01 at San Francisco. The fall in freights apparently has been worth 6 cents per bushel to the owners of wheat on the Pacific coast—all of which is a good thing for the railroads as well as the farmers there. We may be quite certain that freights will not soon again be as low from San Francisco. Ship-owners were greatly deceived as to the amount of wheat in California this year, and they will be more cautious another time.

A RAILROAD SHAREHOLDERS' ASSOCIATION has been organized in England, intended to represent the interests of railroad proprietors in matters relating to legislation and the exercise of public authority. This is an entirely legitimate purpose. Any interest may properly organize and use all legitimate means to prevent injurious and obtain beneficial legislation. Legislation and government and business are affected through a conflict of interests, each protecting its own, so far as possible, and watching to see that no other is favored at its expense. The need of organization is likely to depend largely, under a representative government, on the number of votes which the interest commands, or the representation which it is able to secure in legislative bodies. There is not the slightest danger that any legislation will be had which is generally regarded by the farming community as unjust to its interests; that community casts too many votes. Merchants and manufacturers are also so well represented that anything regarded as injurious to them as a body stands little chance in a legislative body, though when one interest is opposed by others of the same general class, and by the farming interest also, it may be subjected to unfriendly legislation, as in the case of the imposition or removal of duties on certain classes of goods. But the transportation interest commands very few votes and little or no representation in legislatures; and it has somehow come to be regarded as improper for a legislator engaged in transportation to defend the carrying interest in his legislature, though this is expected and required of farmers, manufacturers and

merchants who are members of a legislative body. It is important that those persons who are familiar with any interest affected by proposed or existing legislation should in some way present to the legislative body the probable or actual effect of the legislation on that interest, and should openly exert themselves to prevent injury to that interest. Otherwise it is almost sure to be a victim; for all other interests are active and energetic in their own behalf, and will sometimes secure advantages at the expense of the one which does not work for itself, even when the legislature as a whole desires to be entirely just.

The railroad interest has scarcely any representation in Congress or our state legislatures, but it seems very well represented in the British Parliament. It is said that at present 51 members of the House of Lords and 107 of the Commons are connected with the railroad interest, most of them as directors, but some as active executive officers—men occupying positions like those of Mr. Jewett, Mr. Rutter, Mr. Roberts, Mr. Keep, etc., in this country—who are able to speak with full knowledge, and who are expected to speak and act for the railroad interest, and actually do so—as landholders and manufacturers do for their interests. It would seem, then, that there is comparatively little need of a shareholders' association in England. If it served any purpose it would probably be by demonstrating the extent of the interest and the earnestness of its feeling on public measures affecting it, and it is difficult to see how it could reflect these better than the railroad men who sit in Parliament.

THE CANADIAN PACIFIC ENGINEERS' STRIKE is confined, we believe, to the part of the road west of Lake Superior. The company affirms that the average wages per man in November were \$130, which is much above the average of engineers' wages; but November on this road is probably a month of exceptional activity, when the men, paid by the trip, make unusually large earnings, and it is followed by three or four months when the road may be said to hibernate, has light traffic, and cannot give work enough to yield the average earnings to the trainmen. The cost of living has been unusually high in Manitoba, but it is said to have fallen greatly recently. We have seen nowhere a statement of the grievances of the engineers. Mr. Arthur, the head of the Brotherhood of Locomotive Engineers, has announced that the Brotherhood cannot support the strike, because it was not made in accordance with its rules, which require that certain steps shall be taken to settle difficulties without resorting to a strike, which shall not then be made without authorization by vote of the whole Brotherhood.

There is a report, however, that the people of Manitoba sympathize with the strikers, because they believe that the strike was provoked by the railroad officers as a pretext for closing the road, it being assumed, probably, that the road will not pay its expenses during the winter. The closing of the road means the isolation of the scattered settlements stretching from Winnipeg to the base of the Rocky Mountains from all communication with the rest of the world, from which many of its supplies are obtained, including for much of the line the coal which is there almost as indispensable to life as bread. If the closing of the road in winter were expected, of course the winter's supplies of all kinds would be laid in beforehand; but when the people have depended upon getting supplies through during the winter they can hardly live without the railroad. But the company has too great an interest in the prosperity of that country to be willing that anything of the kind should happen. It would have a great effect in restricting immigration and reducing the price of the vast amount of land owned by the company. Doubtless a very light train service will be most economical to the company in winter, so long as the territory on its line is so very thinly peopled, and would suffice abundantly to serve the country; and in case of great storms of snow the closing of the road for a considerable period may be unavoidable and a saving to the company; as with a light train service it is very much more difficult and costly to keep a road clear. In 1881 there were stations on a new line in Western Minnesota and Eastern Dakota which were not reached by a train from some time in February until May, the whole force of the road having been fully engaged in keeping it clear further east, where there were more people to be served by it, and which must be cleared before the western section could be reached.

THE MAINTENANCE OF TRUNK LINE RATES, by an agreement made just before the great railroad war of 1881 broke out, was to be attempted by giving the Commissioner authority, on learning that any line at any place had accepted a lower rate than the agreed one, to make that lower rate the open and general rate. It seemed, and seems, that the agent who might cut a rate five cents to secure the shipments of a single miller or packing house at some unimportant (or important) competing point, believing that nothing more serious than a squabble would be likely to follow, with possibly a reduction to meet his own on a little freight at the same place, would be very unlikely to do it if he knew that as soon as the cut was known he would have to accept a similar reduction on all his through traffic. At that time it was left to the discretion of the Commissioner to enforce this rule. It was done once or twice when war was inevitable; but since 1881 no action has been taken under it, the companies which have complained of cuts always protesting, we believe, against its application. At a meeting of the trunk line managers last Wednesday it is said that it was agreed that this rule should be made positive, so that a general reduction must follow the

proof of any cut. Unless there is a great change in the way of doing things, there will be call for the enforcement of the rule every week; for though, except for a time this year, rates have been pretty well maintained as to the great bulk of the business since the war of 1881, there has almost always been some cutting going on. Whether proof sufficient to satisfy the enforcement of the rule is to be had in most cases or in many cases, we do not know.

This is a heroic remedy, which may result in a reduction of a dollar a ton in the profits on shipments amounting to 150,000 tons a week because some one has cut a rate 5 cents per 100 lbs. on a few car-loads; but if enforced inflexibly in every instance for a time, it seems that it must inevitably put a stop to such irregularities. It would be a great protection to the public, assuring every shipper rates as favorable as any of his competitors can obtain by the arts which some of them exercise with great shrewdness to secure a reduction in the rates for their individual shipments. We fear, however, that when it comes to the point of sacrificing some hundreds of thousands of dollars, the same authorities that have made the rule positive will take special action to except that particular case. It is not intended, of course, that a reduction so made should be permanent, and it has been specially provided that after such a reduction an advance to the old rates may be made without giving the usual ten days' notice.

If this rule is rigidly enforced, we may expect rates to be reduced more than once during this winter, and the aggregate earnings on through freight, notwithstanding advances of rates closely following the reductions, will probably be considerably less than if there should be the usual amount of cutting and the usual amount of attention to it.

CHICAGO THROUGH RAIL SHIPMENTS EASTWARD for the week ending Dec. 7, *excluding all made at the old rates* (which ought not to have been considerable, but very likely were), have been as follows for the last five years:

	1879.	1880.	1881.	1882.	1883.
Tons.....	40,959	59,203	56,768	23,970	44,592

Last year this was the first week after the advance of rates, and a great deal more was carried at the old rates, and not included in the report, than at the new ones. The incomplete Chicago report of through and local shipments made the total 50,933 tons last year and 54,632 tons this year, and usually the figures in these reports are smaller than those of the complete report. Last year the finally corrected report for December made the total shipments for the month 48,779 tons more than the sum of figures reported weekly, the latter excluding the traffic taken at old rates, nearly all, doubtless, in the first half of the month.

The incompleteness of the statement of tonnage makes the percentages of little significance. Of the shipments reported (taken at full rates) the Chicago & Grand Trunk carried 90.5 per cent., the Michigan Central 19, the Lake Shore 10.3, the Nickel Plate 6.5, the Fort Wayne 19.6, the Chicago, St. Louis & Pittsburgh 12.3, the Baltimore & Ohio 4.3, and the Chicago & Atlantic 7.5 per cent.—the three Vanderbilt roads carrying 35.8 per cent. of the whole, against the 43½ per cent. awarded them, and the two Pennsylvania roads 31.9, instead of 27¼.

For the week ending Dec. 15 the incomplete report of through and local shipments from Chicago shows a total of 54,535 tons, against 52,642 in the corresponding week of last year, and 54,632 in the previous week of this year. The Michigan Central carried most, 21.8 per cent. of the whole; followed by the Lake Shore with 17 per cent. The Nickel Plate also had 9.5, so that the three had 48.3 per cent. of the whole, instead of the 43½ to which they are entitled. They have heretofore generally fallen far short of their allotted percentages.

THE OMAHA POOL COMPLICATION seems to be as obscure now as ever. No definite statement has been made of the so-called "tripartite agreement" between the Union Pacific on one side and the Rock Island and the Milwaukee & St. Paul on the other; but there have been intimations that it covers several different points of greater or less importance and reasonableness, and these statements have been made at different times by different persons, apparently purposely in a obscure way, and intended to lead the public to believe that the provisions of the contract are such as the Burlington and the Northwestern cannot accept, without saying so directly. This apparent disposition to enlarge upon the probable serious effect of the arrangement has led many to believe that the complication is at bottom what Wall street calls a "milking machine;" that is, that it is virtually a conspiracy to bear stocks by leading holders to believe that their property is threatened by grave dangers. It ought not to be necessary to say that this is a crime worse than highway robbery, because the perpetrators are the trustees of the persons whom they rob; but there can be no doubt that it is a crime which has been perpetrated more than once, and that the actual plotters have sometimes succeeded in getting the aid of persons entirely innocent of evil intent, by setting up a cause of trouble which has some show of reason in it, and promises possible legitimate advantage to those whose co-operation is wanted. That is, one party is in earnest in a movement which promises to make a great row, begun or suggested by parties whose chief motive is to profit by the effect of the trouble or the prospect of trouble on the stock market, selling stocks short when the trouble begins, and loading up with them about the time they are ready to show that all is peaceful again.

It is not at all creditable that any railroad managers should be suspected of such doings; but they are.

IMMIGRATION IN NOVEMBER, as shown by the report of the Bureau of Statistics, shows a falling off of about 12½ per cent. from last year, and of 32 per cent. from 1881. For November and the eleven months ending with November the arrivals have been, for three successive years:

November.			Eleven months.		
1881.	1882.	1883.	1881.	1882.	1883.
51,586	40,825	35,393	679,831	686,676	536,430

For the eleven months the decrease, compared with last year, is 150,346, or 22 per cent. Since July, however, the arrivals have not been so much less than last year, being for the four months 168,865, against 179,601 last year and 294,713 in 1881.

Immigration is at its height usually during the four months from April to July inclusive. In the four months from December to March it is usually very light. Last year, for instance, the arrivals were but 94,603 in these four winter months, while in the next four they were 299,380. Thus, the arrivals for the next few months will not be particularly significant. In the present condition of industry in this country it is not desirable that there should be a large immigration, except of people who are prepared immediately to settle on farms, new or old. Usually but a small proportion of the immigrants become farmers at once, and most probably never do.

THE NEXT WHEAT CROP already engages attention. The Illinois Department of Agriculture has reported the acreage and condition of winter wheat in Illinois Dec. 1 and finds the acreage 5¼ per cent. less than last year, and the condition 4 per cent. below an average condition, while last year at this time it was 6 per cent. below an average. Though the acreage is less than last year, and still less than that sown in 1880, it is greater than in any other year. As illustrating what we have often remarked as to the great difference between the northern and southern parts of this state as wheat growers, we may say that while the figures for acreage now submitted show in the northern 28 counties, which have a little less than a third of the area of the state, there are but 31,491 acres of winter wheat; while in the single county of St. Clair, opposite St. Louis, there are 146,695 acres, and in four adjacent counties near St. Louis there are 487,000 acres. The average in the northern 28 counties is but 1,135 acres per county; in the southern 74 counties it is 36,768 acres per county. In fact, the northern counties have so insignificant an acreage that they need not be considered at all. They grow more spring than winter wheat, yet but little of that.

THE NEW YORK, WEST SHORE & BUFFALO COMPANY which expects to open its line through from New York to Buffalo, has formally applied for entrance in to the trunk line combination. This means that it agrees to be governed by the rules of the trunk lines regarding through traffic, will accept a share of the traffic, and agree to maintain rates under penalty of being cut off from its connections if it does not keep its agreement. Its share of the traffic must be determined by agreement of the roads concerned, or, if they cannot agree, by arbitration, which the company by joining the combination agrees beforehand to accept. This agreement to accept arbitration is the essence of the whole contract, but it seems to be ignored by many who treat of such combinations, who often say that trouble is likely to be caused by the impossibility of agreeing upon the proportions in which traffic shall be divided. But when a company becomes part of such a co-operative association, it by that act agrees to accept whatever share of the business may be awarded it by the tribunals established for such purpose, having a right to appeal and to call for a revision of the award at stated intervals, which latter right may be of prime importance to a new road whose traffic has yet to be developed.

PROVISION EXPORTS IN NOVEMBER were again much larger than in the corresponding week of last year, there being an increase of 25 million pounds (80 per cent.) in hog products and of 11 millions (66 per cent.) in cattle products. The exports of hog products were also 8 per cent. greater than in November, 1881, but they were very much less than in that month for three years previous, when they ranged from 98½ to 112 millions of pounds. Thus they show a recovery from the great falling-off that followed the bad corn crop of 1881, but nothing like the activity of previous years.

The exports of beef tallow and dairy products, however, were the largest ever made in November, and the fresh beef exports have not been equaled in any month before, except in December, 1880. The value of the total provision exports was 30 per cent. more than last year. For the 11 months ending with November the increase in value is 22 per cent., amounting to \$18,519,236.

Foreign Railroad Notes.

The Berlin City Railroad (elevated) in the four months ending with August last carried 627,449 passengers, which is 17 per cent. more than last year in the corresponding four months. The heaviest travel was on Whitsunday and Whitsunday (152,587 in 1883 against 121,293 in 1882). Thus it seems that nearly one-fourth of the travel of the four months was carried on these two days, which shows what capacity the road has. For the first six months of its fiscal year the gross earnings of the road were \$346,168, which is at the rate of nearly \$50,000 per mile of road, and 23 per cent. more than last year. It is an extremely costly structure, chiefly of masonry, capable of bearing the heaviest trains. The Third Avenue road in New York earned last year nearly \$398,000 per mile of road.

The Prussian Secretary of the Interior has requested that the greatest possible use of the Prussian Technical Testing Establishment at Berlin be recommended to the various railroad authorities. Resort should be had to it especially in all cases where there have been unusual fractures or destruction of materials, especially if an accident resulted. It is the business of the establishment in such cases to ascertain the causes of the failure by mechanical and chemical investigations. The more materials are subjected to tests—especially such as appeared satisfactory when accepted, but failed in use—the easier will it be by comparing the results to approach the final solution of some now quite obscure questions concerning the relation between the chemical and physical properties of construction materials, especially iron and steel, and to prescribe those specifications which will secure the greatest possible safety in the use of the products.

Russia adopted the 5 ft. gauge, for the very purpose, it was said, of making it different from that of the roads in the countries west of it, so that they might not be able to use its roads should they invade Russia. It has recently dawned upon the Russians that as the Americans have been able to change the gauge of several hundred miles of railroad in a single day the Germans or Austrians could probably change the gauge of the Russian roads quite as fast as they could invade the country, and have the use of their enormous rolling stock in supplying the army of invasion. They fear, however, that should Russia invade one of these countries, it would not be so easy to widen the gauge to suit the Russian rolling stock, and they begin to think that their peculiar national gauge, to maintain which they have assumed the cost of transferring all freights crossing the border, and which, therefore, in time of peace is universally regarded as a disadvantage, in time of war will be an obstacle to no one but themselves.

It seems that railroad employes in the service of the German state railroads will be careless and neglect the precautions which they are ordered to take for their own safety, just like company employes here. The official sheet of the Prussian railroad service Oct. 17 contained a circular of the Minister of Public Works, which says: "The fact that numerous injuries to employes and laborers continue to occur in the exercise of their service, especially in making up trains, and that these injuries for the most part are attributable to want of attention to the existing rules for safety or doing what is positively forbidden, gives me occasion to call to mind the circulars of Feb. 20, 1878, and Nov. 26, 1879, which treat of this subject."

"By the last named circular it was directed that the rules for operating should be properly modified so far as they contained directions which could hardly be executed. Since the requisite changes have been made it must now be expected that the duly appointed supervisory officers insist with all energy on the strict following of the existing rules for operation, and that the violation or neglect of these rules be punished inexorably, even in those cases when no accident is the result."

THE SCRAP HEAP.

Locomotive Building.

The Grant Locomotive Works in Paterson, N. J., recently delivered two engines with 16 by 24 in. cylinders and 5-ft. drivers to the San Francisco & North Pacific road. They have steel boilers and the fire-boxes are built to burn wood.

Park Brothers, of Pittsburgh, recently made application to the Chancellor of New Jersey for an order directing an accounting by the Grant Locomotive Works under the arrangement made by that company with its creditors several years ago. The company represented that there had been no profits made, but agreed to present the accounts in Court.

The Cleveland, Columbus, Cincinnati & Indianapolis shops at Brightwood, Ind., recently completed a new mogul freight engine for the road.

Car Notes.

The LaFayette Car works in LaFayette, Ind., have taken an order to build 300 box-cars for the Rochester & Pittsburgh road.

The Marshall Car Wheel & Foundry Co. in Marshall, Tex., has begun to use its new foundry, which has a capacity of 100 car wheels a day. The iron used for wheels is charcoal iron made at the company's furnace near Jefferson, Tex., from local ores.

The Buffalo Car Works in Buffalo, N. Y., have taken a contract to build 500 gondola cars for the Rochester & Pittsburgh road.

Iron Notes.

The rolling-mill of Atkins Brothers, in Pottsville, Pa., has shut down for the present. The length of the stoppage is uncertain.

The Springfield Iron Co., in Springfield, Ill., is filling an order for some very large steel plates. One of these is 228 in. long, 7½ in. wide and ¾ in. thick.

Etna Furnace, near Cave Spring, Ga., has gone into blast again after a short stoppage.

The Elba Iron and Bolt Co., in Pittsburgh, has just put six new puddling furnaces in operation.

Coosa River Furnace, at Gadsden, Ala., was almost entirely destroyed by fire December 10. The fire was caused by an explosion of gas, and destroyed the buildings and machinery and damaged the furnace badly. The loss is estimated at \$175,000.

The Iron City Forging Co., a new concern, has completed its works at Sumner station, near Pittsburgh.

The Heimbacher Forge & Rolling Mill Co., in St. Louis, is filling large orders for car links and pins.

Manufacturing Notes.

The compressed air used in sinking the caissons of the Bismarck Bridge (recently described) was furnished by two No.

4 duplex air compressors, made by the Clayton Steam Pump & Air Compressor Works in Brooklyn, N. Y. While one of these compressors was capable of furnishing an adequate supply of air it was preferred to keep both running at a lower speed. The compressors ran very smoothly, and in the case of the first foundation put in were kept in operation for 80 consecutive days without letting off the pressure. The caissons were 26 by 74 ft. and were sunk about 50 ft. below the surface of the water.

The Beckwith Auto-Pneumatic Signal Co. has been organized in Pittsburgh to make signals under the patents of W. C. Beckwith.

The Hall Railway Signal Co. has arranged to remove from Meriden, Conn., to Philadelphia, where its business will be united with that of Wharton Railway Switch Co., under an agreement lately made.

The Globe Iron Works in Cleveland, O., are building a new iron steamer for lake service. The Cleveland Rolling Mill Co. furnishes the steel angle plates and deck beams.

The Osgood Dredge Co. has been organized in Albany, N. Y., for the purpose of designing, constructing and operating the Osgood boom dredges and all kinds of steam excavators, ditching and hoisting machines and derricks. The company has bought the patents, pattern, drawings and entire business and good-will of Osgood & MacNaughton, whom it succeeds, and with new patents and increased facilities is now prepared to build at short notice powerful and durable dredges and excavators, and to make designs for all kinds of special work. The officers of the company are: Ralph R. Osgood, President; James MacNaughton, Vice-President; John K. Howe, Secretary and Treasurer. It has offices at No. 37 State street, Albany, N. Y., and No. 43 Astor House, New York.

The Rail Market.

Steel Rails.—The market is pretty steady at \$35 per ton at mill, with few sales reported for winter delivery, but many inquiries for next year, and large orders offered at lower rates.

The Iron Age says: "There are numerous inquiries for rails, and orders are being placed rather freely among Pennsylvania mills. It is understood that several mills are now fairly well supplied with orders, and they hesitate to accept more for next summer or fall (delivery at present quotations). There seems to be a confident feeling among the largest companies as to next year's business, now that it is known what they can depend upon, as wages and other items of cost are being adjusted to meet the low prices which have been accepted, but the immediate question is how to get through the winter, orders for early delivery being very scarce. Some mills will probably be closed part of the winter, and others will be run with as light production as possible, in order to keep up their organization of workmen."

Rail Fastenings.—Spikes continue to be quoted at \$2.50 to \$2.60 per 100 lbs. in Pittsburgh and track-bolts at \$2.90 to \$3 per 100 lbs. for square nuts, and \$3.10 to \$3.20 for hexagon nuts. Splice-bars are quoted at 2.9 to 3 cents per pound. The market is weak and large orders could probably be placed somewhat lower.

Old Rails.—The demand for old iron rails is lighter and the market somewhat dull. Quotations are about \$23 to \$23.50 per ton at tide water for tees and \$25 for double-heads.

A Faithful Express Messenger.

The following adventure, although happening some time ago, has never appeared in print. The hero, a resident of Cincinnati, for by that title he deserves to be known, was a messenger in the employ of the Adams Express Co., and running on the Ohio & Mississippi Railroad, between Cincinnati and St. Louis.

One intensely cold night, in midwinter, in 1886, the express train from Cincinnati reached East St. Louis several hours late. The magnificent bridge over the Mississippi had not been constructed, and passengers and freight had to be transferred by ferryboat. At the time referred to the river was frozen over, and teams crossed over without difficulty in the daytime. But at night, owing to the treacherous airholes in the ice, no transfer could be made. The messenger, when he reached East St. Louis, had \$90,000 in currency with him, and had been instructed to deliver it to the St. Louis office that night, the east side of the river not being regarded very safe at that time.

A little after 10 o'clock at night, equipped with a lantern, and carrying his valuable burden with him, the messenger started across the river. The mercury was below zero, and the wind blowing a gale added to the discomfort. There was a mile of ice between him and his destination, with hundreds of invisible air-holes to look out for and avoid, but he counted upon making the shore in half an hour at most.

He made good progress for the first half of the distance, when a slip on the ice and a fall extinguished the lantern. In such a wind a match could not be made to burn, and there was left no other course but to retrace his steps or push on. He chose the latter, because he could be guided by the street lamps in the city. Getting down upon his hands and knees he commenced his journey anew. Every few feet he would encounter a dangerous place and must crawl around it, sometimes a distance of only a few feet and often several rods. Not a single foot of the distance could be traveled upright. Many times he felt discouraged and tempted to give it up.

After a while he felt himself slowly freezing to death, as he recognized the symptoms, and he felt a sort of joy that he could at least die a painless death after the suffering he had been enduring. But he pushed on in spite of the drowsiness that was rapidly overcoming him. At length he reached the shore, when he, for the first time, thought of a new danger in the rough characters that belong on the river front. Thus stimulated he tried to make his way up town. Fortunately he ran across a policeman, who literally dragged him to the express office. He was able only to hand the package to the receiving clerk, and sank to the floor insensible. He had been two hours in making the distance, and more than two-thirds of that time had been spent in crawling over the ice. He recovered, but his shortened stubby fingers of both hands tell, in part, the story of the terrible suffering of those two hours, and the subsequent days of torment while under treatment.—*Cincinnati News-Journal*.

The Massachusetts Commission on the Worcester Accident.

The Massachusetts Railroad Commissioners have made a report upon the accident at North Worcester on Nov. 28. A train made up of an engine, baggage car, smoker and passenger car started from Winchendon for Worcester at 12:30 p. m., and left North Worcester about 2:08 p. m. After running about 350 ft., and having attained a speed of not more than 12 miles an hour, the third car, which was crowded with passengers, left the track on the outside of a curve of 4° 55', breaking the coupler and rolling down the bank a distance of 58 ft. The embankment was about 15 ft. high. Thirty-eight of the passengers were more or less injured, and two of these have since died. No time was lost in sending medical aid and other aid; and the wounded were cared for with

promptness and humanity by the neighbors and by persons connected with the railroad.

The Commissioners found the track in fair and safe condition, and there was no evidence of a spreading of the rails. They say the first thing that occurred to many railroad men upon hearing of this accident was that "the trucks did not curve," thus forcing the wheels to "ride the rail." Upon examination, a probable cause for this appeared in the fact that the curve-plate on the left-hand side of the forward truck was bent out of position, one bolt being broken and one bent. This would inevitably prevent the truck from curving properly, so that instead of following the curve it would keep on straight, running over the rail on the embankment, as this truck did. It is of course impossible to say with certainty that these bolts were injured before the derailment, and not by the derailment. But if broken and bent before, that is a sufficient cause for the accident; and no other plausible reason has been suggested for it. It is quite possible that the breakage occurred when the heavily loaded car passed around the last curve before reaching North Worcester. And if this did happen, the wheels would at the next curve act just as these wheels did, and just such an accident would result. "In our belief," say the Commissioners, "this was the cause of this sad event. And if this was the cause, it could not have been detected at Winchendon or at Gardner, where the wheels were tested, because it probably had not occurred when the train was there, happening in all probability at the last sharp curve."

The Board defends the managers of the road against the accusation of attempting to destroy evidence by removing a rail on the inner side of the curve. It is clear to all the Board that the condition of this inner rail is of no weight as explaining the accident. The derailed car was remarkably strong, and was properly fitted with tools. The stove was all that could be desired.

A Skeleton in a Cab.

The discovery of Indian mounds in burial places is not a rare occurrence in Western New York, but it is but lately that steam shovels used in constructing a railroad have turned out numbers of the skeletons of the aborigines. On Saturday last a gang of men at work with a steam shovel in Kent's gravel pit, on the West Shore Railroad, two miles west of Palmyra, on the apex of a mound exhumed four skeletons of Indians. Two of the skeletons were quite perfect. One of them was secured by a Mr. Brown, while the other was hung up in the cab of locomotive No. 111, where it will take sadry rides as a dead-head, and will ever remind the engineer and fireman of "grim death." The centre of the mound has not been touched by the workmen. When it is more skeletons will be unearthed, probably, and the inhabitants of the vicinity can then have a skeleton in every house.—*Rochester (N. Y.) Post-Express*.

A Case of Conscience.

The Bridgeport (Conn.) *Standard* says that the following letter was recently received at the Naugatuck Railroad office, in that city, and the contents, 40 cents, entered in red ink to the credit of "Transportation of Passengers" account on the company's books:

SEYMOUR, Dec. 6, 1883.
"Many years ago, probably thirty or more, I think, while Mr. Waterbury was conductor on the Naugatuck Railroad, I went to Ansonia one day on the cars. I think I had but 10 cents with me, which I paid for my fare. If I remember right the fare at that time was 15 cents. I have thought of it many times lately whether I paid the balance. I wish to be quite sure about it, therefore I have paid to your station agent, Mr. Beach, 40 cents, which he will inclose to you, wishing to pay the 5 cents with interest.
Very respectfully,
***"

Emigrant Chests.

How the men who handle baggage at the Union depot succeed in transferring some of the curious-looking emigrant boxes or chests from one train to another without the aid of a derrick is a mystery to a great many people. Some of the boxes are so large that they can scarcely be thrust through the doors of baggage cars, and they are so heavy that they might be made to serve in an emergency as anchors for steamships. Those chests which come from Germany look as though they were designed to last a century and serve as heirlooms to be handed down from father to son. So troublesome did these awkward boxes become, when emigration to the Far West began to increase a year ago, that the baggage agents of the country deemed it necessary to hold a meeting and adopt some rule governing them for the future, but the rule they adopted has not proved at all satisfactory. If the baggage agents could alter the customs of Germany they might induce the emigrants to put their baggage in several boxes instead of one. Although they passed a rule declaring they would not receive a single piece of baggage weighing over 250 pounds, the huge boxes continued to arrive with great rapidity. The rule was never adopted by the Union Depot Co. of this city, as it was considered impracticable. Some of the boxes weigh half a ton and contain almost everything the emigrants owned in Germany, with the exception of their houses and barn-yards.—*St. Louis Republican*.

An English Shareholders' Association.

An organization called "the Railway Shareholders' Association," in which Sir Edward Watkin is prominent, has been started in England with the following objects:

1. To minimize the interference of irresponsible state officials with the regulation and management of railways and with the rates fixed by acts of Parliament, and by the necessities of competition. Such regulation and management were originally given by Parliament to boards of directors, elected by and responsible to the shareholders whose property they administered, and ought not to be transferred to Government officials, unless that property is purchased by Government.
2. The unconditional repeal of the railway passenger duty, a duty imposed on account of the existence of taxes upon other means of locomotion, all of which have now been removed, and the burden left upon railways alone.
3. An alteration in the present system of local rating, by which railway property is practically left to the varying decisions of assessment committees, who in this case actually tax profits of trade and subject railways to a burden relatively heavier than that imposed upon any other property subject to local taxation.
4. An alteration in the laws relating to compensation for railway accidents, so that some limit may be imposed upon the practice of awarding ruinous amounts against railway companies, and some equitable proportion be established as between fares often of pence and compensations of thousands of pounds.

Keeping Christmas.

General Manager F. N. Finney issues the following circular to all employees of the Wisconsin Central road: "Recognizing the faithful service and entire devotion of the men employed in handling the business of these lines, it is with pleasure that I notify you that Christmas, Dec. 25, 1883, will be observed as a general holiday. All trains,

excepting passenger and such trains as are necessary to move perishable property or live stock, will be canceled on that day, and all employees and their families will be carried free on all trains from Monday morning, Dec. 24 until Wednesday evening, Dec. 26. The heads of departments will issue passes to all that can be spared from their duties, who will make requests upon them.

"I wish you one and all a Merry Christmas and a Happy New Year."

Profitable Passenger Traffic.

A correspondent of the New York Tribune writing from Syracuse says:

"A funny story is told in connection with the West Shore road. Last week a Syracusean purchased a ticket to New York and took his seat in an elegant car—the sole occupant. He handed his ticket to the conductor, who at first refused to take it, but finally did so, saying, apologetically, 'Excuse my distrust, but this is the first New York ticket I have ever seen.' Syracuseans all have passes to New York."

General Railroad News

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

New York, New Haven & Hartford, annual meeting, in New Haven, Conn., at 11 a. m. on Jan. 9.

Pennsylvania & New York, annual meeting, at the office in Philadelphia, Jan. 14, at noon.

Philadelphia & Reading, annual meeting, in Association Hall, Philadelphia, Jan. 14, at noon.

Dividends.

Dividends have been declared as follows:

Boston, Revere Beach & Lynn, 3 per cent., semi-annual, payable Jan. 1, to stockholders of record Dec. 23.

Central of Georgia, 3½ per cent., semi-annual, payable Jan. 1. The last dividend was 4 per cent., and it has heretofore been announced, by mistake, that the January dividend would be the same.

Flint & Pere Marquette, 3½ per cent., semi-annual, on the preferred stock, payable Jan. 15. Transfer-books close Dec. 20.

New York, New Haven & Hartford, 5 per cent., semi-annual, payable Jan. 2.

Northern Central, 4 per cent., semi-annual, payable Jan. 15, to stockholders of record Dec. 31.

Norwich & Worcester (leased to New York & New England), 5 per cent., semi-annual, payable Jan. 10, to stockholders of record Dec. 31.

Richmond, Fredericksburg & Potomac, 2½ per cent., semi-annual, on the stock and dividend obligations, payable Jan. 1.

Mail Service Extensions.

Mail service has been ordered over new railroad lines as follows:

Bellaire, Zanesville & Cincinnati, service extended from Woodsfield, O., to Zanesville, 70 miles, to date from Dec. 15.

Rochester & Pittsburgh, service ordered over the Buffalo Division, 44 miles, making through service from Buffalo to Punxsutawney, Pa., once daily each way.

Buffalo Railroad Club.

The Buffalo Express of Dec. 17, says: "At Hesper Hall, corner of Washington and Swan streets, to-morrow evening will be held a meeting for the organization of the Buffalo Railway Club. It is proposed to organize a club for purely social purposes. The idea originated a couple of months ago with Mr. Fortier, of the White Line, and a few friends. The idea appears to be popular and a permanent organization will doubtless be made. It is proposed to restrict the membership to the clerical and official departments of the Buffalo railways and fast freight lines, which employ, it is estimated, not far from 1,000 young men."

New England Railroad Club.

The regular monthly meeting of the New England Railroad Club was held at the rooms Wednesday evening, Dec. 12. There were some 50 members present.

The minutes of the November meeting were read and accepted. The date of meeting was voted to be changed from the second to the last Wednesday of each month, commencing with January, 1884, so that the next regular monthly meeting will be held Wednesday, Jan. 30, 1884. Subject to be announced.

Quite an interesting debate upon the question of bar iron, as entering into the construction of passenger equipment, occupied the evening; Messrs. Adams, Cochower, Richards, Taylor, Partridge, Foster, Lauder and Gordon joined in the discussion. A communication upon the subject was read from Mr. J. M. Ford, of the Boston & Albany Railroad, who was unable to be present.

Mr. Lauder, late of the Mexican Central Railroad, was appointed as a committee to ascertain the cost of establishing a laboratory in connection with the Club, where material can be tested, the expense of the same to be paid by the different roads interested.

The subject for the next meeting is yet undecided, but "The Wheel of the Future for Engines and Cars" was suggested.

Meeting of Master Car-Builders.

A meeting of Master Car-Builders was held at the Tift House, Buffalo, Dec. 12, at which the following gentlemen were present: Charles Graham, Robert McKenna, Delaware, Lackawanna & Western; J. W. Marden, Fitchburg; J. D. McIlvain, Grand Trunk; John Kirby, A. C. Robeson, Lake Shore & Michigan Southern; J. S. Lentz, Lehigh Valley; R. Miller, R. Potts, Michigan Central; Leander Garey, E. A. Olmstead, New York Central & Hudson River; John McKenzie, New York, Chicago & St. Louis; F. M. Wilder, New York, Lake Erie & Western; E. H. Bowman, Pennsylvania and New York; J. P. Hovey, Rochester & Pittsburgh.

Mr. F. M. Wilder was called to the chair, and Mr. J. S. Lentz was made Secretary.

After discussion the following resolutions were adopted:

"Resolved, That it is the sense of this meeting that roofs blown off cars while in transit, and which upon examination show faulty construction, namely: The ends of the car lines improperly fastened to the plates, tin roofs improperly cleated down, or rotten car lines or plates, the owner of said car or cars shall be at the expense of replacing the roof, and not the companies in whose possession the car was when the roof was blown off.

"Resolved, That all cars unfit for interchange traffic be marked 'Local' and the capacity be stenciled on said cars.

"Resolved, That cars in through traffic which have leaky roofs be marked with a sign, stenciled 'leaky roof; sent home,' and that the road responsible for the car be notified of the condition of all such cars."

It was decided to hold another meeting at the same place on the second Wednesday of February next.

ELECTIONS AND APPOINTMENTS.

Brunswick & Western.—The following appointments have been made to date from Dec. 19: Mr. O. S. Benson, General Freight and Passenger Agent, and Mr. J. A. McDuffe, Train-Master, vice Mr. D. H. Fitch, resigned. Mr. E. D. Wolfe, Agent at Albany, Georgia.

Buffalo, New York & Philadelphia.—Mr. P. G. Dwyer, late Train-Master, has been appointed Superintendent of the Buffalo Division, in place of Mr. J. T. Gardner, who has gone to the Rochester & Pittsburgh road.

Buffalo & Southwestern.—This company has elected the following officers: President, John F. Moulton; Vice-President, James Adams; Secretary and Treasurer, W. S. Bissell. The road is leased to the New York, Lake Erie & Western.

Carson & Colorado.—Mr. Hume Yerrington is appointed Purchasing Agent. Mr. M. H. Hyde is appointed Master Car-Building in place of B. W. Lyon, resigned.

Chain of Rocks Bridge Co.—This company has been organized at St. Louis with the following directors: James P. Cori, John Edwards, John L. Ferguson, William Glasgow, Jr., Amos F. Hoffer, Thomas Howard, E. Wells. The board elected Thomas Howard President; William Glasgow, Jr., Vice-President; Amos F. Hoffer, Secretary; John L. Ferguson, Treasurer.

Eastern.—The new board has elected Mr. Arthur J. Sewall, of Bath, Me., President in place of Mr. George E. B. Jackson, and has re-elected Francis I. Amory, Clerk; N. G. Chapin, Treasurer; W. J. Hobbs, Auditor.

Engineers' Club, of Philadelphia.—At the monthly meeting on Dec. 1 the following gentlemen were elected active members of the Club: Walter Ales, Daniel P. Bruner, Albert W. Dilks, H. V. Elmer, Andrew Haig, E. Nichols, Wm. W. Perkins, H. W. Spayler, Josef C. Turk, R. W. Waddell.

Galveston, Harrisburg & San Antonio.—The following circular from Superintendent E. G. Thompson is dated Houston, Nov. 24:

"On Nov. 30, 1883, the Houston Division will be consolidated with the Louisiana and San Antonio Divisions.

"The Louisiana Division and authority of Mr. W. Irwin, Superintendent, and Mr. D. C. Smith, Master Mechanic, will be extended west to Glidden. Headquarters at Houston.

"The San Antonio Division and authority of Mr. W. G. Van Vleck, Superintendent, and Mr. J. J. Ryan, Master Mechanic, will be extended east to Glidden. Headquarters at San Antonio.

"The El Paso Division and authority of Mr. James Campbell, Superintendent, and Mr. J. L. Bonner, Master Mechanic, will be extended east to Del Rio. Headquarters at El Paso.

"Mr. D. T. Davis will remain in charge of the shops at Harrisburg."

Under this order the Louisiana Division extends from Vermilionville to Glidden, 304 miles; the San Antonio Division from Glidden to Del Rio, 300 miles, and the El Paso Division from Del Rio to El Paso, 461 miles.

Hartford & Connecticut Valley.—At the annual meeting, Dec. 11, the following directors were chosen: Richard D. Hubbard, Henry C. Robinson, Hartford, Conn.; Charles M. Pond, West Hartford, Conn.; Samuel Babcock, Middletown, Conn.; Daniel C. Spencer, Old Saybrook, Conn.; E. H. Trowbridge, George H. Watrous, New Haven, Conn.; Wm. D. Bishop, Nathaniel Wheeler, Bridgeport, Conn. There is no change from last year.

Hartford & Connecticut Western.—At the annual meeting in Hartford, Dec. 18, the following directors were chosen: C. T. Hillyer, J. F. Jones, L. B. Merriam, Hartford, Conn.; Henry Gay, Wm. L. Gilbert, West Winsted, Conn.; J. O. Phelps, Simsbury, Conn.; E. T. Butler, Norfolk, Conn.; Lynn Dunning, East Canaan, Conn.; Wm. H. Barnum, A. H. Holley, Frederick Miles, Lime Rock, Conn.; Thomas Cornell, Rondout, N. Y.; R. B. Carpenter, New York.

Huron & Southwestern.—The officers of this new company are: J. M. Snedigar, President; George W. Sterling, Vice-President; Leslie Duley, Secretary; F. E. Stevens, Treasurer; T. J. Nichol, Chief Engineer; L. T. Graves, Right-of-Way Agent. Offices at Huron, Dakota.

Kansas City, Fort Scott & Gulf, and Kansas City, Springfield & Memphis.—Mr. F. E. Nettleton is appointed General Baggage Agent of the above railroads, with headquarters at Kansas City, Mo., to date from Nov. 18. All correspondence relating to that department should be addressed to him.

Lake Shore & Michigan Southern.—Mr. G. W. Stevens has been appointed General Master Mechanic in place of James Sedgley, resigned, to date from Jan. 1. He has served as Division Master Mechanic on the road for several years.

Louisville, New Albany & Chicago.—Mr. N. B. Lasier has been appointed General Baggage Agent, with office in Chicago, in place of J. W. Browning, resigned.

Maine Central.—At the annual meeting in Augusta, Dec. 19, the following directors were chosen: Darius Alden, Augusta, Me.; Abner Coburn, Skowhegan, Me.; Thomas W. Hyde, Arthur Sawall, Bath, Me.; Wm. G. Davis, George E. B. Jackson, Horatio M. Jose, Portland, Me.; Frank Jones, Portsmouth, N. H.; Wm. B. Bacon, Samuel C. Lawrence, Richard Olney, Willard P. Phillips, Boston; George S. Morison, New York.

Manhattan Beach.—This company has re-elected Austin Corbin President; G. S. Moulton, Secretary and Treasurer. The road is leased to the Long Island Railroad Company.

Missouri Pacific.—Mr. R. A. Lybrook has been appointed Train-Master of the Transcontinental line of the Texas & Pacific Division, with office at Texarkana, Texas.

Naugatuck.—The board has elected Wm. D. Bishop President, in place of E. F. Bishop, deceased. Mr. Wm. D. Bishop is a brother of the late President, and was formerly President of the New York, New Haven & Hartford Company.

New York & Boston Inland.—The Connecticut Company of this name has elected George Cook President; George E. Spare, Secretary and Treasurer.

New York & New England.—Mr. Enos H. Tucker has been appointed Superintendent of the Woonsocket Division.

New York, West Shore & Buffalo.—This road is now divided into three divisions, as follows: The Southern Division from Jersey City to Albany, C. W. Bradley, Superintendent, office in New York; the Mohawk Division, from Coeymans Junction to Syracuse, H. W. Garner, Superintendent, with office in Syracuse; the Buffalo Division, from Syracuse to Buffalo, F. E. Merrill, Superintendent, with office in Buffalo.

Oregon Railway & Navigation Co.—Mr. T. Jefferson Coolidge, of Boston, is chosen President of this company in place of Henry Villard, resigned.

Oregon & Transcontinental Co.—Mr. Wm. Eadicott, Jr., of Boston, is chosen President of this company in place of Henry Villard, resigned. Mr. Eadicott is a largest stockholder and has been a director since the company was organized.

Pontiac, Oxford & Port Austin.—At the annual meeting in Pontiac, Mich., recently, the following directors were chosen: Charles A. Carpenter, Frank H. Carroll, John W. Deford, George W. Debevoise, Alfred A. Fiske, James Houston, A. W. Leroy, J. Teneyck. The board elected George W. Debevoise President and General Manager; Charles A. Carpenter, Vice-President; Frank H. Carroll, Secretary and Treasurer; James Houston, Superintendent.

Providence & Stonington Steamship Co.—At the annual meeting in Providence, Dec. 12, the following directors were chosen: A. N. Beckwith, D. S. Babcock, Samuel D. Babcock, Nathan F. Dixon, George M. Miller, Henry Morgan, E. P. Taft. The company is controlled by the New York, Providence & Boston Railroad Company.

Rhode Island & Massachusetts.—At the annual meeting last week this company elected directors as follows: Jonathan Chase, George L. Littlefield, Hezekiah Conant, James P. Ray, Jesse Boynton, Darius Goffe, Jasper G. Ray, Edgar K. Ray, Arnold B. Chase. The road is leased to the New York & New England.

Richmond & West Point Terminal Co.—At the annual meeting in Richmond, Va., Dec. 13, the following were chosen: President, W. F. Clyde; Directors, George F. Baker, Calvin S. Brice, A. S. Buford, George S. Scott, Samuel Shethar.

Rochester & Pittsburgh.—Mr. James T. Gardner has been appointed General Superintendent, a new office on this road. He has been for some time Superintendent of the Buffalo Division of the Buffalo, New York & Philadelphia road.

St. Joseph & Western.—The United States Circuit Court has appointed Mr. Wm. Smyth, of Keokuk, Ia., Receiver of this road.

Seaboard, Pennsylvania & Western.—The officers of this new company are: President, Robert M. Janney, Philadelphia; Secretary, C. M. Stabler, Springfield, N. J.; Treasurer, S. E. Heasley, Brooklyn.

Sinaloa & Durango.—Mr. John E. Bell has been appointed Master Mechanic in place of W. P. Dutton, deceased, and has gone to Culiacan, Mexico, to take charge of the office. Mr. Bell was recently on the Lake Shore & Michigan Southern road.

Sioux City & Pacific.—Mr. W. G. Brownson has been appointed Superintendent of Transportation. He was recently on the Chicago & Northwestern road.

Texas & St. Louis.—Mr. George W. Lilley has been appointed Traffic Manager, with office in St. Louis. He will continue to act as General Freight and Passenger Agent also for the present.

Virginia Midland.—At the annual meeting in Alexandria, Va., Dec. 19, the following were chosen: President, John S. Barbour; Directors, George S. Scott, George F. Baker, Calvin S. Brice, John McAnerney, W. P. Clyde, George S. Parsons, A. D. Shepard, J. A. Garland, New York; A. J. Capron, Baltimore; R. A. Coghill, C. M. Blackford, W. H. Paine, J. T. Lovell, A. S. Buford, James Bryan, C. G. Holland, of Virginia.

Virginia & Truckee.—Mr. M. M. Hyde has been appointed Master Car-Building in place of B. W. Lyon, resigned. Mr. Hume Yerrington has been appointed Purchasing Agent.

Wheeling & Lake Erie.—At the annual meeting in Toledo, O., Dec. 19, the following directors (one-third of the board) were chosen for three years: Melvin C. Day, Arthur Levy, W. L. Sutherland, Noah H. Swayne.

PERSONAL.

—Mr. W. P. Dutton, Master Mechanic of the Sinaloa & Durango road, died recently at Culiacan, Mexico.

—Mr. George P. Frick has resigned his position as General Manager of the Express and Telegraph departments of the Baltimore & Ohio road, in order to devote his time to his private business.

—Col. J. G. Foreacre has resigned his position as General Superintendent of the Georgia Pacific road, and it is reported that he has been offered an important position on the East Tennessee, Virginia & Georgia road.

—Mr. Charles P. Clark has resigned his position as Second Vice-President of the New York, New Haven & Hartford Co., in consequence of his election as President of the New York & New England. Mr. Clark remains a director of the New Haven road.

—Mr. D. W. C. Rowland, who recently resigned his position as General Superintendent of the Louisville & Nashville Railroad, is now enjoying a short rest from active work. He is at present living at his place at Crescent Hill, in Jefferson County, Kentucky.

—Mr. L. W. Sandiforth, Superintendent; Charles W. Rodgers, General Freight Agent, and S. D. Collier, Road Master of the Danbury & Norwalk Railroad, have all resigned their positions, to date from Jan. 1 next. The reasons for this general vacation of offices are not given.

—Mr. Henry Villard has resigned his position as President of the Oregon & Transcontinental and the Oregon Railway & Navigation companies. The reason given for this action is that, the Northern Pacific being completed, he should devote his time to the management of that company, and should give up all official connection with the auxiliary and allied companies.

—There is a rumor that Mr. George M. Robeson is to succeed Mr. Franklin B. Gowen as President of the Philadelphia & Reading Co. Mr. Robeson is a lawyer, who has served as a member of Congress and Secretary of the Treasury, but has hitherto had no connection with railroads except as counsel. It will be remembered that Mr. Gowen is a lawyer, and that when he was chosen President he had served the company only as its attorney. The present report, however, needs confirmation.

—Mr. Charles Paine has resigned his position as General Manager of the New York, West Shore & Buffalo road, on account of ill health. He will sail from New York, Dec. 22, and purposes making a tour in Europe, with the expectation that rest and travel will restore his health. Mr. Paine went to the West Shore road from the Lake Shore & Michigan Southern, where he was for a number of years General Superintendent. Upon him has devolved the labor of organizing the operating departments of the new road and putting its machinery into working condition. In his resignation

the West Shore suffers a serious loss, for his place cannot easily be filled.

—Mr. James K. Taylor, who for the past 13 years has held the position of Master Mechanic on the Old Colony Railroad, and who recently resigned that office, was on Saturday afternoon, Dec. 8, called into the repair shops at South Boston and in the presence of several hundred employees presented with a gold-headed ebony cane inscribed "J. K. Taylor, from employees O. C. R. R., 1883." A French clock surmounted with a bronze statue, an elegant easy chair, with foot rest, and a beautiful pair of Parisian Bisque figures. He was also given, for himself and wife, a silver ice-pitcher with two gold-lined goblets. The presentation speech was made by Foreman Kolseth in a few well-chosen remarks. Mr. Taylor, although taken completely by surprise, responded in a very appropriate manner, after which he was given three rousing cheers.

—A dispatch from San Francisco, Dec. 13, says: "Charles McLaughlin was shot and killed to day by Jerome B. Cox. The tragedy was the result of 17 years of litigation. McLaughlin was the pioneer president of the Central Gas Light Co., a large capitalist and land owner, and ranked among the millionaires. He was the promoter of the old overland route, out of which he made considerable money in 1882. He contracted to build the Western Pacific Railroad from San Jose to Sacramento for \$5,400,000, and sublet the grading of the masonry work to Jerome B. Cox and others for \$900,000. After 20 miles of the road had been built, McLaughlin failed to make payments. Cox, who had put \$50,000 of his own money, had to stop work. McLaughlin completed the road and sold it to the Central Pacific, realizing a large sum. Cox brought a suit against the company and McLaughlin for something over \$150,000, and obtained a judgment, which on technicalities the Supreme Court reversed. Cox amended his complaint and again recovered. The Supreme Court again reversed the decision. A third, fourth and fifth trial resulted similarly. These adverse decisions so weighed on the man's mind that last spring he attempted to shoot Justice McKinsley, of the Supreme Court, who, he believed, was chiefly instrumental in deciding adversely. Cox went this morning to McLaughlin's office and demanded \$40,000 in settlement of accounts. Being refused he shot McLaughlin three times. The latter lived 30 minutes. The prominence of the parties created intense excitement on the streets. Cox was formerly Captain of the Tenth Indiana Battery and served during the war under Rosecrans."

—Judge Reuben Hitchcock, of Painesville, O., died at Clifton Springs, N. Y., Dec. 9, aged 77 years. He had been in failing health for some time, and had gone to the sanitarium at Clifton Springs in the hope of securing some improvement. Judge Hitchcock was born in Burton, O., graduated from Yale College and was admitted to the bar in 1834. After serving for several years as Judge of the Circuit and Common Pleas Courts, he resigned in 1855 to become counsel of the Cleveland & Mahoning Railroad Co. He was also Vice-President of the company, and devoted himself to the interests of the road until its completion. He resumed the practice of law in Cleveland, associating himself with James Mason and E. J. Estep, retaining his connection with the railroad as director and legal adviser. His reputation as a lawyer continued to grow, and he took high rank in the profession throughout the state. In 1869, when the affairs of the Atlantic & Great Western Railway became complicated, Judge Hitchcock was appointed Receiver, and later, in 1875, as Referee of the reorganized company. He became widely known as a successful manager in matters pertaining to railroad interests. His ability was unquestioned and his integrity above suspicion. His business interests were varied. He was one of the original trustees and was among the first presidents of the Cleveland Society for Savings. He was a large investor in railroads, and a stockholder in several Cleveland corporations. Judge Hitchcock was one of the founders of Lake Erie Seminary, trustee of Western Reserve College, and has always been known as an earnest friend of education. In politics he favored progress and reform, and has been attached to the Republican party since its organization. His funeral was very largely attended; among the pall-bearers were Messrs. J. H. Devereux, R. P. Ranney, T. P. Handy, H. B. Perkins and Henry B. Payne.

TRAFFIC AND EARNINGS.

Chicago-St. Louis Pool.

A meeting of representatives of the roads in the Chicago-St. Louis freight pool was held in Chicago, Dec. 19, when it was agreed to continue the pool for six months from Jan. 31, when it would expire by limitation. Mr. H. C. Wicker was chosen arbitrator of the pool.

Grain Movement.

For the week ending Dec. 8 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past ten years:

Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1874.....	2,247,072	636,161	1,361,514
1875.....	3,129,850	742,915	1,835,211
1876.....	2,732,511	1,380,152	2,246,464
1877.....	2,808,567	1,172,719	2,463,069
1878.....	3,834,457	1,453,904	3,097,492
1879.....	3,611,180	899,623	2,703,737
1880.....	4,832,388	1,181,301	3,699,086
1881.....	3,178,051	1,926,288	2,302,700
1882.....	5,226,097	2,032,704	3,401,907
1883.....	6,503,543	2,377,659	3,440,754

The week is the first after the close of lake and canal navigation.

The receipts of the Northwestern markets for the week are very much greater than in the corresponding week of any previous year, and were nearly a fourth more than last year, when they were larger than ever before. There were also 535,000 bushels more than in the previous week of this year. This is an unusual course for the Northwestern receipts to take, as they usually diminish after navigation closes. Last year they were increased in December by unusual receipts of new corn; this year it is the wheat and oats receipts that are unusually large. The receipts are especially large at Chicago and Milwaukee, and the latter's receipts are the largest of the year. Duluth receipts are also unusually large for the season. About three-fourths of the wheat arrived at these three places, which indicates that it is spring wheat chiefly that is moving.

The shipments of these markets for the week were also larger than in the corresponding week of any previous year, though but 345,000 bushels more than last year. It is the first week that there were no lake shipments; but there is a decrease of 597,000 bushels (20 per cent.) in the rail shipments from the previous week, due probably to the advance in rail rates. The amount going down the Mississippi was 76,262 bushels, or 3.2 per cent. of the whole.

The Atlantic receipts were a little less than last year and less also than in 1880, but larger than in other years. They were 377,000 bushels less than in the previous week of this year and were the smallest since July. There were doubtless some canal receipts at New York during this week, as

boats that had passed through the canal just before the closing would not get down the Hudson until after Dec. 1. Exports from Atlantic ports for this week ending Dec. 8 have been, for four years:

	1880.	1881.	1882.	1883.
Flour, bbls.	173,369	58,504	242,268	205,254
Grain, bu.	2,366,470	1,042,508	1,394,298	1,879,289

Including flour the shipments, though about 330,000 bushels less than last year, were 1,497,000 more than in 1881, and but 343,000 less than in 1880.

Railroad Earnings.

Earnings for various periods are reported as follows:

Eleven months ending Nov. 30:				
	1883.	1882.	Inc. or Dec.	P. c.
Ala. Gt. Southern	\$652,392	\$761,973	I.	\$109,419 25.0
Central Pacific	22,777,341	23,642,409	D.	865,068 3.7
Chi. & Gt. Trunk	2,707,741	2,044,526	I.	657,215 32.3
C. St. P. M. & O.	5,030,887	4,597,254	I.	433,633 9.4
C. N. O. & T. P.	2,364,047	2,558,321	I.	5,739 0.2
Fla. Cent. & West	388,378	368,647	I.	19,731 5.4
Fla. Transit. & P.	467,713	374,806	I.	92,907 25.3
Grand Trunk	16,406,525	15,419,232	I.	987,293 6.5
Gulf, Col. & S. F.	1,928,817	1,387,466	I.	541,354 39.0
Illinois Central	6,214,351	6,387,017	D.	172,666 2.7
Iowa lines	1,821,373	1,788,652	I.	32,721 1.8
Southern Div.	3,321,290	3,250,722	I.	570,568 17.6
Ind. B. & West.	2,724,721	2,433,805	I.	290,916 11.9
Marq. H. & O.	887,341	1,267,016	D.	379,675 29.9
Northern Pacific	9,179,208	6,494,901	I.	2,744,307 42.6
Ohio Southern	381,162	346,708	I.	34,454 9.9
Rich. & Dan.	3,510,512	3,343,984	I.	166,528 5.1
Char. C. & A.	150,443	177,706	I.	27,263 18.1
Va. Midland	1,650,312	1,381,352	I.	268,960 19.5
Western N. C.	348,253	223,847	I.	124,406 55.6
St. L. A. & T. H.	1,320,777	1,331,410	D.	4,633 0.3
Main Line	75,838	800,105	D.	46,267 5.8
Belleville Line	360,387	345,465	I.	14,922 4.3
St. L. & Cairo	463,167	414,505	I.	48,662 11.7
Vicks. & Meridian				

Ten months ending Oct. 31:				
	1883.	1882.	Inc. or Dec.	P. c.
Burlington, Cedar	\$2,277,364	\$2,276,191	I.	\$1,173 0.1
Rapid & North.	667,705	784,027	D.	116,322 14.8
Des. M. & Ft. D.	276,102	286,736	D.	10,634 3.7
Net earnings	75,894	89,539	D.	13,645 15.2
Oregon & Cal.	841,879			
Net earnings	237,149			
Utah Central	974,000	1,255,214	D.	281,214 29.4
Net earnings	502,824	725,819	D.	222,995 30.7

Month of October:				
	1883.	1882.	Inc. or Dec.	P. c.
N. Y. & New E.	\$365,877	\$304,592	I.	\$61,285 20.1
Net earnings	104,486	63,568	I.	40,918 63.9
Oregon & Cal.	131,310			
Net earnings	68,576			
Oregon Imp. Co.	438,147			
Net earnings	179,451	151,651	I.	27,797 18.3
Utah Central	116,127	132,935	D.	16,808 12.6
Net earnings	62,371	82,534	D.	20,163 24.3

Month of November:				
	1883.	1882.	Inc. or Dec.	P. c.
Ala. Gt. Southern	\$107,329	\$98,086	I.	\$9,243 9.4
Central Pacific	2,100,000	2,139,259	D.	39,259 0.2
Chi. & Grand Tr.	265,082	232,665	I.	32,417 13.9
C. St. P. M. & O.	570,766	515,008	I.	55,758 10.8
C. N. O. & T. P.	237,483	242,827	D.	5,344 2.2
Fla. Cent. & West.	43,450	39,165	I.	4,285 11.2
Fla. Transit. & P.	60,929	47,008	I.	13,921 29.8
Pt. W. & Denver	42,750	27,400	I.	15,350 56.0
Grand Trunk	1,516,489	1,492,128	I.	24,361 1.6
Gulf, C. & S. F.	296,925	244,597	I.	52,328 21.4
Ill. C. & N. W.	610,143	583,472	I.	26,671 4.6
Iowa lines	192,808	176,392	I.	16,416 9.3
Southern Div.	533,388	518,457	I.	14,931 2.9
Ind. B. & West.	255,972	250,908	D.	5,064 2.0
Marq. H. & O.	61,801	60,861	D.	940 1.5
Northern Pacific	1,220,300	751,633	I.	468,667 62.3
Ohio Southern	37,017	36,925	I.	92 0.2
Rich. & Danville	363,704	362,922	I.	782 0.2
Char. C. & A.	82,021	88,528	D.	6,507 7.3
Va. Midland	147,016	136,826	I.	10,190 7.4
Western N. C.	36,132	23,337	I.	12,795 54.7
St. L. A. & T. H.	123,884	155,334	D.	31,450 20.2
Main Line	73,304	72,817	I.	487 0.7
Belleville Line	33,939	36,160	D.	2,221 6.1
St. L. & Cairo	58,461	59,647	D.	1,186 1.9
Vicks. & Meri.				

First week in December:				
	1883.	1882.	Inc. or Dec.	P. c.
Bur. Cedar Rap.	\$69,956	\$55,497	I.	\$14,459 26.2
C. & East. Ill.	43,254	40,019	I.	3,235 8.1
C. & Gt. Trunk	64,032	56,931	I.	7,101 12.4
Ches. & Ohio	80,541	63,347	I.	17,194 27.2
E. L. & B. S.	16,490	11,928	I.	4,562 37.8
F. T. Va. & Ga.	99,545	79,316	I.	20,229 25.5
Georgia Pacific	10,654	7,697	I.	2,957 38.4
Peoria, D. & Ev.	15,045	11,417	I.	3,628 31.8
Oregon Ry. & N.	105,109	77,753	I.	27,356 35.1
Rochester & Pitts.	22,893	6,480	I.	16,413 252.8

Second week in December:				
	1883.	1882.	Inc. or Dec.	P. c.
C. M. & St. P.	\$511,000	\$434,167	I.	\$76,833 17.7
Chi. & Northw.	411,500	369,400	I.	42,100 11.4
C. St. P. M. & O.	116,500	80,800	I.	35,700 44.1
Denver & R. G.	152,400	104,700	I.	47,700 45.6
Louis. & Nash	293,300	288,135	I.	5,165 1.8

Weekly earnings are usually estimated in part, and are subject to correction by later statements.

Coal.

Coal tonnages for the week ending Dec. 8 are reported as follows:

	1883.	1882.	Inc. or Dec.	P. c.
Anthracite	735,380	685,243	I.	50,137 7.3
Semi-bituminous	120,778	106,931	I.	13,847 12.3
Bituminous, Penna.	64,636	61,518	I.	3,118 5.1
Coke, Penn.	63,081	58,118	I.	4,963 8.6

The anthracite market is very dull and prices are low. Dealers have settled down into the belief that the winter will be open and the domestic demand consequently light, and it seems also to be the general opinion that a lack of harmony among the companies will prevent any serious attempt to reduce production.

The coal tonnage of the Pennsylvania Railroad for the week ending Dec. 8 was:

	Coal.	Coke.	Total.
Line of road	149,858	52,194	202,052
From other lines	63,454	10,887	74,341
Total	213,312	63,081	276,393

The total tonnage this year to Dec. 8 was 11,618,539 tons, against 10,416,174 tons to the corresponding date last year, showing an increase of 1,202,365 tons, or 11.5 per cent.

The coal tonnage of the Philadelphia & Reading Railroad for the fiscal year ending Nov. 30 was as follows:

	1883.	1882.	Increase.	P. c.
Phila. & Reading	8,719,978	8,420,826	299,152	3.4
Proper	2,729,395			
N. J. Central, six months		2,729,395		
Total	11,449,373	8,420,826	3,028,547	35.8

In this statement the New Jersey Central tonnage is included only from the date of the lease, June 1, 1883, and is not reported for the corresponding time last year. The statement includes coal for the company's use, and also bituminous coal, the amount of the latter carried being small.

The Illinois Bureau of Labor Statistics estimates the bituminous coal production for that state for 1888 at 10,508,791 tons, against 9,115,653 tons in 1882, an increase of 1,393,138 tons, or 15.3 per cent.

Cumberland coal shipments for the week ending Dec. 15 were 34,588 tons. The total shipments this year to Dec. 15 were 2,412,686 tons.

Cotton.

The cotton movement for the week ending Dec. 14 is reported as follows, in bales:

	Interior markets.	Seaports.
	Receipts.	Shipments.
1883.	155,049	131,280
1882.	174,027	165,875

The total receipts at the seaports for the cotton year (from Sept. 1) to Dec. 14 have been 2,966,931 bales; the exports, 1,519,898 bales. The stock reported on hand Dec. 14 was 1,169,764 bales.

The total receipts at interior markets for the cotton year to Dec. 14 have been 1,871,051 bales, a decrease of 169,343 bales, or 8.7 per cent., as compared with last year. The stock reported Dec. 14 was 410,246 bales.

Boston Traffic Notes.

The movement of loaded freight cars to and from the New York & New England at the Newburg transfer last month compared as follows with the same month in 1882: West-bound, 1883, 875; 1882, 776; increase, 99. East-bound, 1883, 4,613; 1882, 2,210; increase, 2,403. Included in this estimated movement for the month were 2,134 car-loads of coal, against 1,338 in November, 1882. The following is the report of the loaded freight car movement in November, 1883, via the Harlem transfer around New York city as compared with November, 1882: West-bound, 1883, 2,700; 1882, 2,839; decrease, 139. East-bound, 1883, 3,585; 1882, 4,049; decrease, 464.

Commissions on Pacific Coast Tickets.

The Transcontinental Association has issued a circular calling the attention of connecting lines to the following extract from Section 6 of the articles of agreement:

"From and after the date of this agreement no street commission or ticket rebate on east-bound overland tickets will be paid by the companies parties hereto, and connecting Eastern lines shall be requested by the Commissioner, hereafter to be appointed, to discontinue the payment of street commissions and rebates to passengers, and the making of any cuts whatever from established through rates; and should any such railroad company fail to comply with such request, it shall be the duty of the Commissioner to notify the Pacific Coast terminal companies, which shall then suspend the sale of all tickets over the line so failing or refusing for so long a time as the Commissioner may direct."

"And, further, the Pacific Coast terminal companies shall, through the Commissioner, redeem within five days from date of issue, at the full amount received by them therefor, any and all through tickets of their respective issues purchased by or for passengers at such times and under such circumstances as may be deemed best by the Commissioner."

Also to the following resolution, passed at the Topeka meeting of the Association:

"Resolved, That as it is only in accord with the purposes and provisions of the agreement of this Association, all ticket sales from the Pacific Coast to the East must be, as now, confined to the offices of the terminal lines, it being understood that this resolution is not to interfere with the present privilege enjoyed by resident agencies of Eastern or foreign roads in securing tickets at the regular offices for the use of their respective patrons. Also, should any foreign road persist in continuing the present practice of issuing its exchange orders on its Western terminal office after having been requested by our Commissioner to discontinue the custom; or should any road establish an independent ticket agency on the Pacific Coast, the Commissioner will be authorized to discontinue the sale of through tickets over or via such road for such length of time as may by him be deemed advisable."

Traders' Dispatch.

The following circular from T. N. Jarvis, Manager of this line, is dated Buffalo, N. Y., Dec. 18:

"Below please find initials and numbers of the cars in this line."

Del. & Hud. Can. Co.	3,100 to 3,199 inclusive.	30 ft.—30,000 lbs.
N. Y. L. E. & West.	28,600 " 29,599 "	29 ft.—36,000 lbs.
Phila. & Read.	35,000 " 35,999 "	34 ft.—40,000 lbs.
Lehigh Valley	50,001 " 50,199 "	33 ft.—40,000 lbs.
N. Y. Chi. & St. L.	20,000 " 20,199 "	30 ft.—40,000 lbs.
N. Y. Chi. & St. L.	20,200 " 20,999 "	34 ft.—40,000 lbs.
Ind. Bloom. & West	12,000 " 12,999 "	34 ft.—40,000 lbs.

"The movements of these cars should be reported to C. W. Cushman, Manager the Railway Car Association, Buffalo, N. Y. The mileage must be reported to and settled direct with owners, a separate item from their common cars."

Commercial Express Line and Erie & North Shore Dispatch.

The following circular has been issued by General Manager Henry Vilas:

"The Lehigh Valley Railroad Co. is putting 100 cars into the Commercial Express Line. These cars are 28 ft. long, with capacity for 20 tons, and are numbered from 36,401 to 36,500 inclusive. Please add this series to the Commercial Express equipment, dated Oct. 20."

The following circular has also been issued under date of Dec. 10:

"Please send all car reports showing the movements of 'E. & N. S. D.', 'W. & E. D.', 'E. & M. L.' and 'Diamond Line' cars to C. W. Cushman, Manager the Railway Car Association, Buffalo, N. Y. Blanks and envelopes will be furnished upon application to him."

Lackawanna Line.

The following circular from W. H. Smith, Manager of this line, is dated Buffalo, N. Y., Dec. 15:

"Below please find numbers and initials of cars in this line:

Bos. Barre & G.	500 to 599 inclusive.	34 ft.—40,000 lbs.
Bos. H. T. & W.	700 " 799 "	" "
Del., Lack. & West.	1,000 " 1,999 "	34 ft.—40,000 lbs.
Del. & Hud. C. Co.	3,200 " 3,299 "	30 ft.—30,000 lbs.
Wheeling & L. E.	4,000 " 4,099 "	" "
P. & O. Dec. & Ev.	4,500 " 4,699 "	34 ft.—40,000 lbs.
Fitchburg	8,000 " 8,199 "	34 ft.—40,000 lbs.
Phila. & Reading	8,500 " 8,699 "	34 ft.—40,000 lbs.
Chi. & Northw.	9,500 " 9,799 "	34 ft.—40,000 lbs.
N. Y. Chi. & St. L.	22,000 " 22,999 "	34 ft.—40,000 lbs.
Wab. St. L. & Pac.	31,001 " 32,000 "	" "

"The movements of these cars should be reported to C. W. Cushman, Manager the Railway Car Association, Buffalo, N. Y."

"The mileage account, report and settle direct with owners, a separate item from their common cars."

RAILROAD LAW.

Injury to Minor Employee.

In the case of Long against the Pennsylvania Co. the Indiana Supreme Court lately held:

1. In an action by a widow for the death of her minor son,

caused while coupling cars, and where the complaint alleged that the employment of the son by the railroad company was without the plaintiff's knowledge and consent and against her will, the declaration of the minor son made four or five days before the injury, that he knew how to couple cars and had made couplings before, was not admissible in evidence. In such case there may be a recovery on the part of the parent where the employment of the minor is without the parent's consent; it is not necessary that it also be shown to be against the known will of the parent.

In this case the injury happened while the deceased was attempting a coupling of two cars, one of which had a Miller patent coupler and the other a common draw bar coupler, by reason of which the bumpers did not meet and the cars came close up together. An instruction given assumes that the use of such couplers was culpable negligence. This was erroneous. The rule in relation to the negligence of a railroad company in the use of machinery and appliances should have been stated, and it should have been left for the jury to determine whether in this case, applying that rule to the facts, culpable negligence existed.

OLD AND NEW ROADS.

American Midland.—It is reported that a contract has been let for the construction of this road from Youngstown, O., to Ft. Wayne, Ind., 235 miles. The contractor is George Potts, and the contract is probably conditional on the raising of money by the company.

Atchison, Topeka & Santa Fe.—On the branch or loop line (the Wichita & Western) which this company is building south of its main line in Kansas, the grading is now completed from Wichita, Kan., west to Kingman, 45 miles, and track has been laid from Wichita to Goddard, 15 miles.

Atlantic & North Carolina.—The directors have voted to lease this road for 30 years to an eastern syndicate which proposes to extend it from Goldboro, N. C., to Fayetteville, to connect with the Cape Fear & Yadkin Valley road. The lease is subject to ratification by the stockholders.

Bangor & Piscataquis.—Work on the extension of this road from Blanchard to Moosehead Lake was begun early last spring, and has proceeded very satisfactorily. Rails have already been laid on the first 3½ miles, and the rails for the remainder of the distance are all at Blanchard. It will take about 1,040 tons of rails to lay the whole distance. At West Cove, where the road will terminate, the company has purchased 15 acres of land, on which will be erected a station, freight houses, and other necessary buildings. The ride from Blanchard to Moosehead Lake will be very picturesque. All bills of construction have been paid to Dec. 1, and about \$100,000 remain in the treasury. It is thought \$75,000 will complete the work. The city of Bangor builds the extension. A large hotel is to be built at West Cove, which will be in readiness for the early summer travel.

Bellaire, Zanesville & Cincinnati.—The track on this road is now completed to Zanesville, O., 70 miles westward from the old terminus at Woodsfield, and 112 miles from Bellaire. The road follows a somewhat circuitous route through the hilly country of Southeastern Ohio, and its completion has required some heavy work. It has been built chiefly by local capital and is intended to serve local interests.

Brownsville, Fort Kearney & Pacific.—In the old suit of Thomas, trustee, the United States Supreme Court has rendered its decision on the appeal from the Circuit Court for the District of Nebraska. This was a suit to foreclose a mortgage upon railroad property belonging at the time the mortgage was executed to the Brownsville, Fort Kearney & Pacific

future improvements. The Grand Trunk Junction Railway Co. is an organization which controls the Grand Trunk property from Thirty-ninth street to the South Side Union Depot, and which attends to all extensions and improvements at this point.

"It was decided to issue a consolidated mortgage for \$800,000 (\$4,000,000), and to take up all the outstanding obligations, including those for the construction of the Polk Street Union Depot. It was agreed to acquire additional facilities through the Western Indiana, and, together with the property already held by the Junction Co. on Twelfth and State streets, and such buildings and property as may be acquired hereafter for the accommodation of the Grand Trunk business at this point, lease them to the Chicago & Grand Trunk. The latter company agrees to pay to the Junction Co. 5 per cent. interest per annum on its actual outlay."

Cincinnati, New Orleans & Texas Pacific.—The matter of the over-issue of stock of this company by its former secretary, George Dougherty, now deceased, has been at last brought before the courts in a suit begun by the Citizens' National Bank, of Cincinnati, against the company in the Superior Court. This is considered a test case to determine the liability of the company for the over-issued stock.

Cincinnati, Indianapolis, St. Louis & Chicago.—A report that this company had made arrangements to secure a controlling interest in the Louisville, New Albany & Chicago road is positively denied by President Ingalls. It is, however, not impossible that the attempt was made, and it is also possible that the plan has not been given as yet.

Another version is that this company made a direct offer to the Louisville, New Albany & Chicago for the purchase of its road. The offer was not accepted, and the matter was dropped, and no further negotiations are in progress. These reports are given for what they are worth.

Another report which has been circulated is that the Pennsylvania Company has opened negotiations for the purchase or lease of the Cincinnati, Indianapolis, St. Louis & Chicago road. This report also is denied by President Ingalls.

Cleveland, Akron & Columbus.—The Court has authorized Receiver Walker to lease the track of this road from Orrville, O., to Cuyahoga Falls to the Pittsburgh, Cleveland & Toledo Co. The lease, it is understood, is only a temporary one.

Detroit, Mackinac & Marquette.—On this company's extension from Marquette, Mich., westward, track is reported laid on a short section of 8 miles, from Ishpeming west to the Winthrop Mine.

Eastern Shore.—A reported sale of this road to the Pennsylvania Railroad Co., of whose Delaware Division it is an extension, is denied by authority.

Fort Worth & Northwestern.—The Fort Worth (Tex.) Gazette says: "We understand that the capitalists of Fort Worth are now considering the proposition to build a narrow-gauge railroad from this city to Throckmorton, a distance of 135 miles, via Veal's station, Springtown, Wilson's station, Graham and Belknap on the Brazos River, passing directly through the immense coal-fields in Young, Jack and Throckmorton counties, developing a country and an industry that will annually contribute millions of dollars to the commerce of our city. This route would leave the Wise County coal-fields to the right about 20 miles distant, but the coal in the southern part of Jack County will be tapped, and the Belknap and Throckmorton coal beds, which are vastly superior to those of Wise County, will be more directly reached. Moreover, a branch 20 miles long, extending from Veal's Station to Cactus Hill, would strike the very heart of the Wise County coal, and thus by 150 miles of railroad the entire coal beds of our northwest would be laid under tribute to our city."

"From this city to Springtown, a distance of 30 miles, the country is level, and compares well with the Texas Pacific line from here to Weatherford."

Grand Trunk.—The Union Jacques Cartier road is completed and was open for business Dec. 15. It is 6½ miles, running from the main line near Montreal to the Canadian Pacific at Sault au Recollet. It has been built to complete a connection outside of Montreal.

Huron & Southwestern.—This company has been organized to build a railroad from Huron, Dak., southwest to Chamberlain, or some point on the Missouri below that town.

Indiana, Illinois & Iowa.—This company has decided to build its repair shops in Kankakee, Ill., accepting the land offered for the purpose in that town.

Memphis & Charleston.—The directors have decided to issue the \$1,000,000 6 per cent. second mortgage bonds, and \$500,000 7 per cent. car trusts, authorized by the stockholders at the meeting in November. Private parties, it is said, have made offers for both issues, which will probably be accepted.

Mexican Railroad Notes.—The following notes are from the Mexican Financier of Nov. 24:

The Mexican National's little line between Zacatecas and its suburb of Guadalupe is paying well, having transported 180,000 passengers in September and October.

The inspector of the Mexican National's line building from Celaya to San Luis Potosi reports that up to the end of October the track was laid to kilometre 45, counting from the crossing of the Mexican Central.

A concession has been granted to Gen. Alfonso Flores for the construction of a railway line from Tampico to Victoria through Altamira, Presas, the hacienda of Santa Maria and La Sierra, with the branches necessary for local traffic; also from Victoria through Hidalgo and Rio Blanco, terminating in Matehuala with a branch to Padilla, and other branches which may be necessary. The gauge may be either narrow or broad. A subsidy of \$4,500 a kilometre of narrow-gauge track is granted.

A new time-table will go into effect on the Mexican National in a few days, and trains to Morelia and Celaya, which now take two days for the trip, lying over for the night at Acambaro, will go through in a day. The train for Morelia will reach that city at about 9 o'clock at night, and the train for Celaya will keep on to San Miguel de Allende. The company is picking up a deal of profitable business on its recent extensions, and large amounts of sugar and tobacco are coming into Morelia to be shipped.

Mobile & Ohio.—This company makes the following statement for November and the five months of its fiscal year from July 1 to Nov. 30:

	November.	1883.	1882.	Five months.	1883.	1882.
Earnings.....	\$279,553	\$301,205	\$1,004,933	\$1,000,222		
Expenses.....	138,850	148,006	615,428	701,055		
Net earnings.....	\$140,703	\$153,089	\$389,195	\$299,167		
Per cent. of exps.....	49.7	49.3	61.3	70.1		

For the five months there was an increase of \$4,401, or 0.4 per cent., in gross earnings, with a decrease of \$65,627,

or 9.4 per cent., in expenses, the result being a gain in net earnings of \$70,028, or 23.4 per cent.

New York City & Northern.—The committee of bondholders of the New York City & Northern Railroad at a meeting held Dec. 7, resolved that the modifications in the plan and agreement for reorganization, as proposed by the company and the Loan & Improvement Co., be not agreed to, and instructed the counsel of the committee to progress pending foreclosure suit as speedily as possible.

New York, Lake Erie & Western.—It is said that the Montgomery Branch will be extended next season from its present terminus at Montgomery, N. Y., to Shokan on the Ulster & Delaware road, a distance of about 38 miles. The line proposed is nearly parallel with the Wallkill Valley road for about half the distance, and will pass near Lake Mohonk, besides reaching other summer resorts. The object of the extension is to give the Erie a connection with the Catskill Mountain region.

New York, Pennsylvania & Ohio.—In the suit brought to set aside the lease of this road to the Erie, testimony is now being taken in Cleveland. The chief witness so far has been James McHenry, but his evidence discloses very little that was not known before.

New York, West Shore & Buffalo.—It is announced that all the bonds held by the North River Construction Co., and recently offered by that company to its stockholders, have been taken. The price at which they were offered was 90, an equal amount of stock to go with each bond.

Preparations are in progress for the opening of the road through to Buffalo on Jan. 1. It is announced that the company has made formal application for admission to the pool on both east and west-bound business.

Northern Pacific.—The following statement is made for the months of October and November:

	October.	November.
Earnings.....	\$1,397,221	\$1,253,200
Expenses.....	614,586	557,700
Net earnings.....	\$782,635	\$695,500
Rentals and taxes.....	53,111	45,500
Surplus.....	\$729,524	\$650,000
Per cent. of expenses, including rentals and taxes.....	47.8	48.1

The earnings and expenses given for November are partly estimated.

A correspondent sends us the following in relation to the Wickes Branch, the completion of which was noted last week:

"The Helena & Jefferson County Railroad, known here as the Wickes Branch, starting at a point five miles east of Helena, called Helena Junction, extends thence through Clancy and Jefferson to Wickes, 20 miles. The location of the line was commenced Aug. 9, and the track is now laid. It will be opened for business about Dec. 15."

"The business of the line will be mainly the transportation of ores and bullion from the Comet, the Alta Montana and the Gregory mines. Other mines are also likely to be opened immediately."

Ohio Central.—A dispatch from Columbus, O., Dec. 13, says: "Judge Baxter to-day, in the United States Court, appointed J. E. Martin permanent Receiver of the Ohio Central Railroad & Coal Co.; A. W. Scott, as general local counsel and counsel for the Southern District and C. H. Scribner for the Northern District, with a bond of \$50,000; Judges Sage and Welker, of the Ohio District, concurring; Judge Jackson, of Wheeling, W. Va., who here, but did not confer with Judge Baxter. Mr. Martin will be permanent Receiver by prior jurisdiction. This action ousts Thomas R. Sharp, appointed in West Virginia, and gives Mr. Martin control of all the road from Toledo to Charleston. The Court announced previously that any act of Mr. Sharp as Receiver would be null and void."

Later dispatches say that Judge Jackson, of the West Virginia Circuit, will adhere to his action in appointing Mr. Sharp, and that there is likely to be a conflict of jurisdiction.

Oregon & California.—Track on this road is now laid to Grant's Pass, Oregon, 99 miles southward from the old terminus at Roseburg, and 298 miles from Portland. Track-laying is in progress from Grant's Pass to Rock Point, 17 miles.

Oregon Improvement Co.—This company, owning and operating the Pacific Coast Steamship Co., the Columbia and Puget Sound Railroad and the Seattle Coal & Transportation Co., makes the following statement for October and the eleven months of its fiscal year from Dec. 1 to Oct. 31:

	October.	1883.	1882.	Eleven months.	1883.	1882.
Earnings.....	\$438,147	\$356,661	\$3,705,109			
Expenses.....	253,696	205,007	2,510,985			
Net earnings.....	\$179,451	\$151,654	\$1,194,124			
Per cent. of expenses.....	59.0	57.5	67.8			

For October there was an increase of \$81,486, or 22.8 per cent., in gross earnings, with an increase of \$53,659, or 26.2 per cent., in expenses, the result being a gain in net earnings of \$27,797, or 18.3 per cent.

Oregon & Transcontinental Co.—It is stated that the Executive Committee has recommended that the January dividend be passed. This action will certainly be approved by the board.

A full statement of the company's affairs and present financial condition is understood to be in preparation, and it will be published as soon as completed.

The retirement of Mr. Villard from the presidency of this company is noted elsewhere. Mr. Villard's action is said to have been taken in order to facilitate a settlement with the Northern Pacific Co.

The following statement of the assets held by the company is said to be an approximate estimate, prepared without time to refer fully to the books: 152,000 shares of Oregon Navigation at \$10, \$1,520,000; 160,000 shares Pacific common at \$28, \$4,480,000; 167,500 shares of preferred at \$7, \$1,172,500; and \$13,750,000 worth of Oregon and California bonds, dividend scrip and branch bonds; total market value, \$44,177,500, from which, deducting \$13,250,000 liabilities, there remains \$30,927,500 net assets, or 77½ per cent. on \$40,000,000 capital. The \$13,250,000 consists of \$12,000,000 maturing liabilities, \$1,000,000 due Mr. Villard and \$250,000 call loans.

Reynoldsville & Falls Creek.—This company has been organized to build a branch line about 7 miles long, from Falls Creek, Pa., on the Rochester & Pittsburgh road, to Reynoldsville, on the Low Grade Division of the Allegheny Valley road.

Rome, Watertown & Ogdensburg.—This company's statement for October is as follows:

	1883.	1882.	Inc. or Dec.	P. c.
Earnings.....	\$169,005	\$172,737	D. \$3,732	1.8
Expenses.....	93,780	105,583	D. 11,803	11.1
Net earnings.....	\$75,225	\$67,155	I. \$8,070	12.0

The decrease in gross earnings and in expenses, it is understood, is largely due to the loss of through coal traffic, which was carried at extremely low rates.

St. Johnsbury & Lake Champlain.—At a meeting held in Boston, Dec. 12, the directors voted to execute a mortgage on the road and issue bonds for the purpose of putting the road in good order and providing additional equipment, in order that the road may be ready for the increased business expected from the completion of the connection with the Ogdensburg & Lake Champlain road.

St. Louis & San Francisco.—The following statement has been published for the year ending Dec. 31, the November and December figures partly estimated:

Gross earnings.....	\$3,803,591
Expenses.....	1,776,135
Net earnings.....	\$2,027,456
Interest and sinking funds.....	1,349,300

Surplus for the year.....\$778,156

The corrected statement, it is thought, will run a little over rather than under these figures.

St. Paul Railroads.—The St. Paul Pioneer Press publishes a review of the railway extension and improvements for the year on roads centering in St. Paul, showing the following figures:

	Miles of track laid.	Total cost of improvements.
Northern Pacific.....	753	\$15,100,000
Milwaukee & St. Paul.....	175	2,685,000
Manitoba.....	86	3,680,500
Northwestern.....	141	2,500,000
Omaha.....	145	1,400,000
St. Paul & Duluth.....	16	240,000
Minneapolis & St. Louis.....	3	170,000
Total.....	1,319	\$25,781,500

New mileage for 1883, 1,319; new mileage for 1882, 2,400; new mileage for 1881, 2,081; new mileage for 1880, 1,478.

Satsop.—This company has been incorporated to build a railroad in Mason County, Wash. Ter., connecting the valley of Goldsboro Creek with the headwaters of the Satsop River. It is intended to open up a lumber district.

Seaboard, Pennsylvania & Western.—This company has been formed by the consolidation of the Seaboard, Pittsburgh & Great Western and the Delaware Water Gap and Southwestern, two corporations whose roads exist on paper only. The projected line is from the Delaware Water Gap to a point near Pittsburgh.

Securities on the New York Stock Exchange.—The Governing Committee of the New York Stock Exchange has admitted to dealings at the board the following securities:

New York, Lake Erie & Western. third-mortgage bonds extended at 4½ per cent. for \$4,618,000, issued in place of 7 per cent. bonds matured and paid.

Northern Pacific. an additional \$2,782,000 of first-mortgage 6 per cent. bonds, making the total amount issued up to date \$45,509,000.

Central of New Jersey. convertible debenture 6 per cent. bonds due May 1, 1908. The bonds are convertible into the stock of the company at any time between Jan. 1, 1885, and Jan. 1, 1907.

Southern Pacific of New Mexico. first-mortgage 6 per cent. bonds, due Jan. 1, 1911.

Chicago, Milwaukee & St. Paul. an additional \$1,000,000 first-mortgage 5 per cent. bonds on the Chicago & Pacific Western Division, and an additional \$390,000 of Hastings & Dakota Division 7 per cent. bonds.

Louisville & Nashville. second-mortgage 6 per cent. bonds of the New Orleans & Mobile Division, due Jan. 1, 1930, for \$1,000,000.

Chicago & Northwestern. an additional \$975,000 of 5 per cent. sinking fund bonds of 1879, due Oct. 1, 1929.

Denver & Rio Grande. an additional \$532,000 of consolidated mortgage 7 per cent. bonds due Jan. 1, 1910.

Toledo, Ann Arbor & Northern Michigan.—The ties are now being distributed along the line of this road from Owosso, Mich., northward, and tracklaying will soon be begun at Owosso, where the connection with the Detroit, Grand Haven & Milwaukee road has been put in.

Toledo, Cincinnati & St. Louis.—The order of sale of the Cincinnati Northern road, made some weeks ago by the Superior Court in Cincinnati, has been set aside, the creditors, under whose judgments the order was made, having accepted receiver's certificates for the amount of their claims. A special order has been made by the United States Circuit Court directing the sale of certain real estate to pay these certificates.

Vermont & Canada.—The Boston Advertiser says: "The meeting of the stockholders of the Vermont & Canada Railroad, which will be held at Bellows Falls on the 18th inst., will be formal only, as an agreement has been already made that it shall stand adjourned for 30 days to await the result of the hearing before Chancellor Joyce (which will begin on the 19th inst.) upon the petition of the Central Vermont, that the Langdon suit may be dismissed, and that the corporation may be discharged from its receivership. The Central Vermont asks for the dismissal of the suit on the ground that Langdon is not the real principal, but is a representative of the holders of the trust-deed securities, and that it (the corporation) has really brought the suit, has paid the expenses, and should be permitted to discontinue it at its pleasure. Mr. Langdon is a member of the Central Vermont board of directors, as well as the principal in this suit, and it is not regarded as impossible that an agreement may yet be effected with him by which the suit will be dismissed. This suit, it will be remembered, was brought by Mr. James R. Langdon and others against the Central Vermont as receiver and manager of the Vermont Central and Vermont & Canada railroads, to secure a decision by the Court of Chancery making their trust-deed securities a prior lien on the entire property of the Central Vermont, underlying everything; and the purpose of its desired dismissal was to give a clear title to all the property to the new organization, the Consolidated Railroad Co. of Vermont. It was supposed at first that there would be no objection to the dismissal of the Langdon suit, but at present the consent of the principal has not been obtained."

At a meeting of the board in Boston, Dec. 17, it was decided to proceed with the petition for the dismissal of the Langdon suit, without regard to any action of the other parties to the suit.

The petition came before the Court Dec. 19, but no hearing was had, the case being put over to Jan. 17.

Wisconsin Central.—The extension of this company's Wisconsin & Minnesota line from Chippewa Falls, Wis., to Eau Claire, 10 miles, is completed, and trains began to run over it last week. The company will run frequent local trains between Chippewa Falls and Eau Claire.